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INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER

TEMPORARY NATIONAL ECONOMIC COMMITTEE

A STUDY MADE FOR THE TEMPORARY NATIONAL ECONOMIC COMMITTEE, SEVENTY-SIXTH CONGRESS, THIRD SESSION PURSUANT TO PUBLIC RESOLUTION NO. 113 (SEVENTY-FIFTH CONGRESS) AUTHORIZING AND DIRECTING A SELECT COMMITTEE TO MAKE A FULL AND COMPLETE STUDY AND INVESTIGATION WITH RESPECT TO THE CONCENTRATION OF ECONOMIC POWER IN, AND FINANCIAL CONTROL OVER, PRODUCTION AND DISTRIBUTION OF GOODS AND SERVICES

MONOGRAPH No. 39-A

REVIEW AND CRITICISM ON BEHALF OF STANDARD OIL CO. (NEW JERSEY) AND SUN OIL CO. OF MONOGRAPH NO. 39 WITH REJOINDER BY MONOGRAPH AUTHOR

Printed for the use of the
Temporary National Economic Committee



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MONOGRAPH NO. 39-A

REVIEW AND CRITICISM ON BEHALF OF STANDARD OIL CO.
(NEW JERSEY) AND SUN OIL CO. OF MONOGRAPH NO. 39
WITH REJOINDER BY MONOGRAPH AUTHOR

ACKNOWLEDGMENT

The accompanying reply submitted by Messrs. W. S. Farish, president, Standard Oil Co. (New Jersey) and J. Howard Pew, president, Sun Oil Co., to T. N. E. C. Monograph No. 39 and the rejoinder prepared by Roy C. Cook, author of the monograph, are printed in accordance with the rule adopted by the Temporary National Economic Committee to give full expression to conflicting points of view.

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(Signed) JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee.

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SECTION I

THE ALLEGED CONTROL OF THE
PETROLEUM INDUSTRY

A REPLY TO MR. ROY C. COOK'S MONOGRAPH, "CONTROL
OF THE PETROLEUM INDUSTRY BY MAJOR OIL COMPANIES."

LETTER OF TRANSMITTAL

30 ROCKEFELLER PLAZA,
New York, June 2, 1941.

Hon. JOSEPH C. O'MAHONEY,
United States Senate, Washington, D. C.

MY DEAR SENATOR O'MAHONEY: Through the courtesy of Mr. Walter White of the Business Advisory Council, the undersigned have placed in your hands a review and criticism of T. N. E. C. Monograph No. 39, prepared by Mr. Roy C. Cook.

This review was undertaken early this year upon receipt of assurances from Dr. Dewey Anderson, Executive Secretary of T. N. E. C., that the Committee would publish our work along with any rejoinder which Mr. Cook might care to make.

* * * * *

While members of the staff of the Standard Oil Co. (New Jersey) and the Sun Oil Co. have collaborated in the preparation of the material contained in the review, full responsibility for the conclusions reached is assumed by the undersigned.

Sincerely yours,

W. S. FARISH.
J. HOWARD PEW.

INTRODUCTION

Mr. Roy C. Cook's monograph entitled "Control of the Petroleum Industry by Major Oil Companies" calls for some reply, especially as it has been published by the Government Printing Office and might seem to have some of the authority of an official document. As a matter of fact, Mr. Cook alone is responsible for this general attack upon the oil industry. Although it has been published as No. 39 in a series of monographs printed for the use of the Temporary National Economic Committee, it is not an official report of the T. N. E. C. Like the other monographs, it contains the following explicit disavowal of T. N. E. C. responsibility:

The status of the materials in this volume is precisely the same as that of other carefully prepared testimony when given by individual witnesses; it is information submitted for committee deliberation. No matter what the official capacity of the witness or author may be, the publication of his testimony, report, or monograph by the committee in no way signifies nor implies assent to, or approval of, any of the facts, opinions, or recommendations, nor acceptance thereof in whole or in part by the members of the Temporary National Economic Committee, individually or collectively. Sole and undivided responsibility for every statement in such testimony, reports, or monographs rests entirely upon the respective authors.

The letter of transmittal by Mr. Thurman Arnold, Assistant Attorney General, makes it clear that the author is speaking for himself. Mr. Arnold wrote:

* * * This report originated and was completed by Mr. Cook as a private research project in the department of economics of the George Washington University.

Mr. Cook has prepared this report, based upon public and privately published sources independently of his official duties as a member of the economic staff of the Department of Justice. The facts, opinions, and conclusions are solely those of the author and are not to be considered as the opinions or policies of the Department of Justice.

Although Mr. Cook is an "expert" in the Department of Justice, he is clearly speaking, in his monograph, neither for the T. N. E. C. nor for the Department of Justice. At the outset, it appears that he is a self-constituted spokesman for the "independents." An independent in the days of the old Standard Oil Trust was any company outside that group, but Mr. Cook does not use the word "independent" in that sense. Apparently, for Mr. Cook, an independent is anyone outside the ranks of the 20 large companies he calls majors. In fact, the "independents" are not a homogeneous group; they have as many differences as they have similarities. The "independents" include some companies with securities listed on the security exchanges and some individual proprietorships; they even include some of the companies which were divorced from the old Standard Oil Co. Some are fully integrated companies which carry on all operations from exploring for oil to selling to the consumers; others are specialists in particular activities, such as drilling wells or transporting gasoline for hire. In the production of crude oil some independents produce

thousands of barrels a day; others only a few. In refining some of the independents have well-located plants with modern equipment, while others have antiquated skimming plants located far from the more important markets. Some of the independent marketers carry on operations in several States, but others operate a gasoline pump as a side line. The hearings before the T. N. E. C. and other investigations of the oil industry show that neither the points of view nor the interests of such "independents" are identical.

Mr. Cook, in trying to speak for all such different sorts of independents, has undertaken a most difficult role. By failing to recognize frankly and fully the differences of interest among the independents, he has been led to accept contradictory complaints. All the complaints of all the independents cannot be added together to make an impressive total, for some complaints cancel out. The most common complaint in the oil industry, and perhaps, indeed, in any industry, is about prices. The producers of crude oil quite commonly would wish that its price might be higher, while the refiners, on the other hand, would like to get their raw material cheaper. Either group may sometimes wish to fix personal responsibility for their unsatisfied desires and blame it all on a group of companies or another branch of the industry. But obviously even the majors cannot at one and the same time push crude prices down to oppress the independent producer and push them up to squeeze the independent refiner. To give another example, the major companies cannot simultaneously push product prices down to hurt the independent refiner and keep them up to put pressure on the independent jobber. To examine all possible complaints and to select the more important ones (among the contradictory claims) calls for clear, unbiased discrimination and intimate acquaintance with the facts of the industry. Mr. Cook has failed to appreciate the difficulties of his self-constituted role.

In his final conclusion, however, Mr. Cook abandons the point of view of the independent oilman, for he concludes that regulation of the oil industry on a public utility basis may be necessary. On this point, the independents would promptly suppress their complaints against one another and against the majors and would disown Mr. Cook as their spokesman. No independent wishes for himself to become part of a public utility.

In reality, therefore, Mr. Cook is not a spokesman for any official agency, for any group of independents, or for all the independents. His contentions are his own.

Mr. Cook's principal contentions, as they appear in his own introduction, are: (1) Control is as complete today as in the days of the old "oil trust." (2) There is definite evidence of cooperation and uniform concerted action by adoption of identical business policies by major companies. (3) The independent has become weaker.

These principal contentions are false. Although their falsity will be shown more fully later in this reply, a brief statement may be made here.

Control cannot be so complete today as in the days of the old "oil trust," for no one company has anything but a small fraction of the share of the business that the oil trust had, and many companies, large and small, are now in vigorous competition with one another. Mr. Cook's first contention, like the second about uniform concerted action, amounts to a denial that competition exists. This second contention will be answered in detail in the following chapter.

There are definite evidences of competition in the oil industry in the record of the T. N. E. C. oil hearings. To cite just a few, the major oil companies compete with one another in their efforts to locate new oil fields and in the development of the techniques and of the technicians who give their finding efforts some prospect of success; different majors have recently developed rival methods of catalytic refining; and some of them have been aided in their struggles by the successful search for economies in transporting gasoline, by pipe line and tank truck, from the refineries to the filling stations. But even the evidence from the T. N. E. C. hearings is hardly necessary. In every market area and from many radio stations, the public is familiar with the efforts of rival oil companies to win and retain their patronage.

It is highly significant that little evidence from the T. N. E. C. is cited to support the assertion of monopolistic conspiracy. If there were a conspiracy, the T. N. E. C. record would have revealed it. The T. N. E. C. record is a voluminous one. It contains many complaints, but most of these arise from the vigorous character of competition.

The contention that the independents have become weaker is likewise without foundation. The T. N. E. C. record reveals that the number of independent producers is increasing, that the independent refiner can retain his position if he has a well-located and modern refinery, that a recent development in transportation, the truck, has opened up new fields for the small independent enterprise, and that the independents now occupy most of the retail field. Contrary to Mr. Cook's contentions, as we shall see in the following chapter, the oil industry is not highly concentrated and concentration is not increasing.

This reply to Mr. Cook will follow the general outline of his monograph. After first discussing his general chapter on "the basic factors" in the oil situation, we will deal with the "four" branches of the industry—production, transportation, refining, and marketing. Finally, we will submit a brief statement of the achievements of the industry.

COMMENTS ON MR. COOK'S CHAPTER ON BASIC FACTORS

Mr. Cook's principal contentions in his chapter "Basic Factors" are: (1) "Control" is concentrated in the oil industry. (2) Integration gives the large companies an unfair competitive advantage. (3) The American Petroleum Institute is a means of holding the rest of the industry subject to the domination of the major companies. Let us look at the record.

CONCENTRATION OF CONTROL

Mr. Cook states that the 20 major oil companies considered in his analysis had at the end of 1939 combined total assets of over \$9,000,000,000, ranging in size from 62 to 2,035 million dollars. He gives the names of the companies and their total assets at the end of 1939. This group represents about 60 percent of the investment in the industry, but, he says, their degree of control is very much higher than this percentage indicates.

This statement on the degree of control is somewhat obscure. In the first place, Mr. Cook does not give any definition of control. In the second place, he offers no explanation of the bald assertion that assets do not measure control. Moreover, he included in the total assets substantial investments outside the United States and, in the case of the Cities Service Co., public utility investments outside the petroleum industry.

The principal criticism of Mr. Cook's statement on the alleged concentration of control is that he selected 20 companies and gave no reason for selecting so large a number. Ordinarily in discussions of concentration a much smaller number is taken. For example, at the opening of the T. N. E. C. hearings, Dr. Willard L. Thorp, representing the Department of Commerce, presented a comparison of the concentration in various American industries. In no instance did he use as many as 20 companies, but smaller numbers, 1, 2, 3, 4, and 5. His figures were: Virgin aluminum, 1 company, 100 percent of output; automobiles, 3 companies, 86 percent of output; beef products, 2 companies, 47 percent of output; bread and other bakery products, 3 companies, 20 percent of output; cans, 3 companies, 90 percent of output; cement, 5 companies, 40 percent of output; cigarettes, 3 companies, 80 percent of output; bituminous coal, 4 companies, 10 percent of output; corn binders, 4 companies, 100 percent of output; flour, 3 companies, 29 percent of output; plate glass, 2 companies, 95 percent of output; safety glass, 2 companies, 90 percent of output; iron ore, 4 companies, 64 percent of output; oil wells, 4 companies, 20 percent of output; steel, 3 companies, 60.5 percent of capacity; whisky, 4 companies, 58 percent of output; women's clothing, 4 companies, 2 percent of output; wood pulp, 4 companies, 35 percent of output; zinc, 4 companies, 43 percent of output.¹ During the

¹ Temporary National Economic Committee Hearings, pt. 1, p. 137.

T. N. E. C. oil hearings, a study published by the Twentieth Century Fund entitled "Big Business: Its Growth and Its Place" was cited to show that the degree of concentration in the oil industry is comparatively low. The study was based on the total wage earners in the manufacturing end of the business; the 6 largest companies in the oil industry and 6 in every other industry were taken to measure the degree of concentration. Oil was forty-sixth in the list of about 80 industries.² The most comprehensive statistics on concentration are those published in the study by the National Resources Committee, *The Structure of the American Economy*, Part 1—Basic Characteristics. Measured by persons employed, the 4 largest producers in petroleum refining had, in 1935, 38.3 percent of those employed in the industry. This figure is exceeded by 5 out of 21 large industries, those employing more than 100,000 persons; by 9 out of 44 medium industries, those employing 25,000 to 100,000 persons; and by 106 out of 210 small industries, those employing less than 25,000 persons.³

Further statistics on comparative concentration are given in T. N. E. C. Monograph No. 27, *The Structure of Industry*, prepared by Willard L. Thorp and Walter F. Crowder, of the Department of Commerce. The Bureau of Mines of the Department of the Interior prepared basic data for the products of mines analyzed for 1935. According to this analysis, the 4 leading companies employed 15.5 percent of the wage earners in petroleum. This percentage for petroleum was exceeded by the percentages in 18 out of 24 mineral products, and exceeded the percentages in 5 other mineral products.⁴

The foregoing statistics clearly show that, on any comparable basis, the concentration in the oil industry is not high, despite the fact that many of the units in the industry are large corporations. Only by using such a figure as the largest 20 companies can it be made to appear concentrated.

Mr. Cook claims not only that control is concentrated but also that concentration is increasing. He states:

the importance of the 20 major companies has grown appreciably in the past 15 or 20 years. From 1926 to 1937 their share of total crude oil production rose from 46.3 to 52.5 percent; of crude oil stocks from 76.6 to 94.2 percent; of refining capacity from 65.5 to 75.6 percent; and of gasoline production from 71.3 to 83.8 percent.

This conclusion must be challenged, for it is obtained by a fallacious statistical procedure. The 20 companies selected are those which are the largest at the present time. At the end of a race, the leaders will have gained in rank over those who led at the halfway mark. By selecting for comparison those who lead at the present time, the group necessarily consists of those who have grown the most; a bias is introduced in the direction of showing increasing concentration. The longer the period covered, the greater is the bias by selecting for study the leading group at the end. If the group selected was that of the leaders of an earlier period, a bias would be introduced in the direction of showing decreasing concentration. The only appropriate method is to compare the percentage controlled by the leaders in each year, irrespective of which companies are among the

² Ibid., pt. 15, p. 8445.

³ Appendix 7, table I, pp. 240-248.

⁴ Appendix F, p. 573.

leaders. This was pointed out to the T. N. E. C. during its oil hearings.⁵ It is illustrated in the following paragraph:

The figures for refining capacity are used for purposes of illustration, because they happen to be the only ones in the T. N. E. C. record which can be checked by the supporting data made public.⁶ Mr. Cook asserts that concentration is increasing because the 20 majors' share of refining capacity increased from 1926 to 1938 from 65.5 to 75.6 percent. Consider the figures in the following table:

Daily crude oil refining capacity

[Percent of United States total]

	1926	1931	1935	1936	1937	1938
4 largest refiners in 1938.....	29.2	33.7	29.6	29.8	31.6	31.6
4 largest refiners in 1926.....	32.9	32.8	28.7	28.8	29.5	29.4
4 largest refiners in each year.....	32.9	34.6	33.5	33.5	31.9	31.6

If we compare the refinery capacity of the four largest refiners in 1938, we find from 1926 to 1938 that there was an increased concentration, from 29.2 to 31.6 percent; if we compare that of the four largest refiners in 1926, we find that there was a decreased concentration, from 32.9 to 29.4 percent; but, if we compare that of the four largest refiners in each year, we find a small decrease in concentration from 32.9 to 31.6 percent.

Mr. Cook's assertion of increasing concentration is refuted in the most comprehensive study of concentration trends, one made for the T. N. E. C. In T. N. E. C. Monograph No. 27, *The Structure of Industry*, Willard L. Thorp and Walter F. Crowder include petroleum refining among the industries with unusual declines in concentration.⁷ According to their figures, concentration in petroleum refining reached its peak in 1923.⁸ The "proportionate index" reached 150 in that year, and declined to 104 in 1929, 91 in 1935, and 88 in 1937.⁹ They note that "the 5 largest (companies) have lost position (in gasoline production), while the second 5 have gained slightly, and the rest of the industry has gained even more. All these measures fall far below the dominance obtained by the Standard Oil Co. prior to 1911."¹⁰

Mr. Cook neglects to point out what is really the outstanding fact about concentration in the oil industry, namely, that there has been an enormous decrease since the dissolution of the old Standard Oil Co. in 1911. The old Standard Oil Co. controlled a greater portion of the total oil business than is now controlled by all the 20 major companies put together. Furthermore, not only are many companies formerly parts of the old Standard Oil Co. now in competition with one another but other companies have grown and many new companies have entered the field. Mr. Cook declared that the 20 major oil companies have developed from companies formerly parts of the old Standard Oil Co. and "other large financial interests, including those controlled by the Mellons and the House of Morgan." This statement implies that the oil companies have been sponsored and

⁵ Temporary National Economic Committee Hearings, pt. 15, p. 8445.

⁶ *Ibid.*, pt. 14-A, table 28b, p. 7801.

⁷ P. 59.

⁸ P. 74.

⁹ P. 90.

¹⁰ P. 262.

are now controlled by large banking interests. As a matter of fact, the majors which have grown up beside the divorced companies have built themselves up largely through reinvestment of their earnings within the growing oil industry and most directors of the major oil companies are operating executives, not financiers.

Mr. Cook contends further that the officers of the larger oil companies are in so dominant a position that they can disregard the wishes of the stockholders. Mr. Cook states:

As is the case of most large corporations, the officers control voting stock so completely that they need not consider stockholder approval of their decisions and policies. In the meetings held by 17 of the major oil companies in 1938, the officers voted an average of 99.3 percent of the common stocks voted.

The stocks of several majors is closely held. For example, the 100 largest stockholders of Shell Union Oil Corporation and Sun Oil Co. held 88.9 and 84.9 percent, respectively, of the common stock at the end of 1938. Certain influential stockholders have interests in many companies. The Harkness and Flagler group, original partners of Rockefeller, and the Rockefeller group have substantial interests in the 6 majors of the Standard group. This interlocking of dominant stockholders makes it easier to pursue concerted action against independent competitors and tends to establish a strong possibility of cooperation. This is especially true of the majors that were a part of the Standard Oil Trust.

This statement could be most misleading. Mr. W. S. Farish, president of the Standard Oil Co. (New Jersey), answered the first point in Mr. Cook's contention when he stated to the T. N. E. C.: "Any implication that, because stockholders sign proxies rather than attend meetings, corporate managers in the oil industry are free to manage without regard to the interest of stockholders is most emphatically not true."¹¹ He elaborated this point during his testimony.¹² It is, of course, true that a single stockholder who is all alone in his disapproval of corporate policies can do little about it; but with all the modern publicity about corporate affairs, he is in an excellent position to get attention if he has a plausible case.

The statement that the stock of some of the major oil companies is closely held is misleading, for the T. N. E. C. hearings show that this is the exception. The T. N. E. C. asked that the companies report the holdings of the 100 largest shareholders. The reports¹³ show that among the large shareholders are many foundations and educational institutions and many investment and banking houses. The last group presumably holds the floating supply of the stock in which the equity is scattered among many customers. It is true that the Sun Oil Co. is closely held, for members of the Pew family hold more than a majority interest. The two other companies which Mr. Cook may have considered as closely held, the Shell Union Oil Corporation and the Skelly Oil Co., are really in a different position, for each of them is better described as an affiliate of the corporation which holds a majority interest in its common stock. Of the 20 major companies, only 1 is closely held without question, and 2 others are affiliates of other companies.

The most serious assertion of Mr. Cook in the paragraph just quoted is that the substantial interests of the Rockefeller, Harkness, and Flagler groups make it easier to pursue concerted action against independent competitors. There is no evidence at all that those interests have led to any concerted action whatsoever. The T. N. E. C. record

¹¹ Temporary National Economic Committee Hearings, pt. 17, pp. 9931-9932.

¹² Ibid., pp. 9663-9682.

¹³ Ibid., pt. 14-A, tables 8 and 9, pp. 7775-7778.

discloses only two instances in which officers of any corporation formerly part of the old Standard Oil Co. testified on this subject. Mr. W. S. Farish, president of the Standard Oil Co. (New Jersey), testified that his company had no group of stockholders who wants control of operations.¹⁴ Dr. Robert E. Wilson, president of the Pan American Petroleum & Transport Co., an affiliate of the Standard Oil Co. of Indiana, testified that his company dealt at arm's length with other oil companies in which there are Rockefeller interests.¹⁵ Of course, Mr. Cook's statement is very vague; he says only that the interlocking of dominant stockholders "makes it easier" to pursue concerted action and "tends to establish a strong possibility of cooperation." But such vague statements might be most misleading.

At no place in his monograph does Mr. Cook offer detailed support for his statement that there is definite evidence of "uniform concerted action by the adoption of identical business policies." There are, of course, many points of similarity among the 20 major companies. They are all integrated companies and are confronted with somewhat similar problems. There are likewise many points of similarity among the military, naval, and aviation policies of rival great powers. But similarity of policies does not imply concerted action. Any large oil company has to be on the alert to copy any improvement made by any of its competitors. However, a careful study of the industry or of the T. N. E. C. record would refute the statement that the policies are identical.

As a matter of fact, there are important dissimilarities among the major companies. Space will permit mention of only a few of the many dissimilarities that might be cited. The Cities Service Co. includes both petroleum and electric utility interests, and the Sun Oil Co. has a wholly owned subsidiary which is engaged in shipbuilding; but most of the majors have few interests outside the industry. Some of the majors have important foreign operations, others do not.

There are also a number of important dissimilarities in the marketing field. There are great differences in the marketing territories of the 20 majors; 7 operate in 38 or more States, 3 operate in from 28 to 33 States, 6 operate in from 17 to 21 States, and 4 operate in from 6 to 10 States.¹⁶ There are substantial differences in the extent to which the major oil companies sell to jobbers; the Gulf Oil Corporation made 7.34 percent of its total domestic sales to jobbers, whereas the Phillips Petroleum Co. made 36.99 percent of its sales to jobbers.¹⁷ In the eastern section of the country, retail dealers who sell gasoline only under the brand name of a single supplier receive from him a discount of half a cent, but this practice is not universal throughout the United States. Credit cards are widely used to permit the customer to charge gasoline and petroleum products at the dealer stations, but this practice is not nearly so prevalent in the Rocky Mountain area as it is in other parts of the United States.¹⁸ The major companies do not generally act as distributors for the well-known brands of Pennsylvania motor oil, but the Standard Oil Co. of Indiana does so.¹⁹

Important dissimilarities among the major companies are also found outside the field of distribution. The Sun Oil Co. manufactures

¹⁴ *Ibid.*, pt. 17, p. 9667.

¹⁵ *Ibid.*, pt. 15, pp. 8374-8375.

¹⁶ *Ibid.*, pt. 14-A, table 37, 7812-7813. The table is reproduced in our appendix as table 1, p. 69 *infra*.

¹⁷ *Ibid.*, table 39a, p. 7818.

¹⁸ *Ibid.*, pt. 17, p. 9404.

¹⁹ *Ibid.*, pt. 15, p. 8513.

and sells but one grade of gasoline, whereas the others have two or three; the Sun Oil Co. also does not use any tetraethyl lead. There are, moreover, important differences among the majors in the extent to which they purchase gasoline. If imports of gasoline are included with purchases and exports are included in sales, the Sun Oil Co. and the Socony-Vacuum Oil Co., Inc., are seen to be large net purchasers of gasoline, for they bought 28.2 and 18.9 percent, respectively, in 1938. On the other hand, the Texas Corporation bought only 2.5 percent.²⁰ Even more striking are the differences in the field of crude oil production. Continental Oil Co., Skelly Oil Co., Ohio Oil Co., and Phillips Petroleum Co. are net sellers of crude; they produce more than they use in their refineries. The opposite is true of the Standard Oil Co. of Indiana and the Standard Oil Co. of Ohio, which are large net purchasers of crude.²¹ There are also differences in the year-to-year changes in stocks of crude oil on hand. During the year 1936 the Sun Oil Co. reduced its crude stocks by 14 percent, whereas the Phillips Petroleum Co. doubled its stocks.²² Finally, there are differences in the financial policies of the different major companies. All the major oil companies are financed chiefly by stock, although most of them also have some funded and long-term debt. At the end of 1938 three companies had obtained over 20 percent of the total capital employed through funded and long-term debt, while two companies had no funded and long-term debt.²³ The 20 major companies also differ in the extent to which the net earnings applicable to common stock are paid out in dividends. Based on the average for the period 1929-38, inclusive, the Texas Corporation earned 4.8 percent on the total book value of common stock and paid out in cash 4.6 percent, while the Sun Oil Co. earned 8 percent and paid out in cash 2.4 percent.²⁴ But further elaboration is needless. There are clearly important differences in policy among the major oil companies and significant exceptions from policies commonly followed by them.

THE COMPETITIVE ADVANTAGES OF INTEGRATION

Mr. Cook gives four reasons why the modern majors are more integrated than was the old Standard Oil trust. They are: (1) The production end of the oil business is now, with the accumulation of underground reserves, "quite advantageous"; (2) to insure adequate outlets, the majors built their own filling stations which they continue to control and which makes it possible to advertise successfully on a national scale; (3) as a result of integration it is possible to lose money in one division and show a profit at the end of the year on the entire activities; (4) a rigid price structure can be maintained. He concludes that the major oil companies earned their profits largely in the divisions "in which the monopoly position is most clearly indicated." This is a most inadequate account of the lengthy discussions of integration before the T. N. E. C.

The explanation that the majors went into production because it was quite advantageous is doubtless correct. This is, however, the branch of the business in which the combined total of the individual 20 companies' shares of the business or, to use Mr. Cook's language,

²⁰ *Ibid.*, pt. 14-A, tables 30-33, pp. 7803-7806.

²¹ *Ibid.*, tables 10, 28a, pp. 7779-7800.

²² *Ibid.*, table 15d, p. 7788.

²³ *Ibid.*, tables 46a-46t, pp. 7843-7862.

²⁴ *Ibid.*, pp. 7880-7881.

their "monopoly position," is the weakest. Mr. Cook's own table 3 shows that the major oil companies had in 1937 only 23.7 percent of the producing oil wells and only 52.2 percent of the crude oil production.

Mr. Cook's second reason for integration is not supported by the evidence. Company-owned stations were never a large proportion of total retail outlets and were never numerous enough in themselves to justify national advertising. Without the distribution provided by the far more numerous stations owned by independents, only a few major companies could afford to undertake national advertising of motor fuels. Furthermore, it might be remembered that nationally advertised commodities are rarely sold only by retail stores owned by the advertiser. This fact can even be illustrated by an example from the petroleum industry: The manufacturers of Pennsylvania lubricants are well-known as national advertisers, in spite of the fact that they do not own any appreciable number of retail stations.

The third reason which Mr. Cook advances for integration is the possibility of offsetting of losses in one division by gains in another. He claims that the marketing division is operated at a loss and offers the advantages of a rigid price structure as part of his explanation. He does not explain what he means by a rigid price structure or show its relation to marketing profits. If he means by this that the majors are able to keep prices high to consumers, then might not one expect to find high marketing profits? Apparently, Mr. Cook does not believe this, because he argues that the marketing divisions are operated at a loss. If he means that the majors' refineries transfer products to their marketing departments at high prices, how does he explain why such arbitrary transfer prices would benefit the integrated companies?²⁵ The only explanation he offers is the statement that "the marketing division is usually operated at a loss but it does make a dependable outlet and extension of other divisions possible." This suggests that the transfer prices do not fairly credit the marketing division with its benefits to the entire business and that the "loss" is a matter of arbitrary accounting. The arbitrary character of the so-called marketing losses was fully explained during the T. N. E. C. hearings,²⁶ and accounts for the fact that most of the companies were unable to supply answers to the T. N. E. C. questions on their earnings by divisions of the industry.²⁷

If the marketing division were really unprofitable, it would be to the advantage of the integrated companies to withdraw from the field; and no argument about offsetting losses and gains can obscure that fact. The whole argument is extremely weak. If any branch of an industry is regularly and persistently unprofitable, the average earnings of a fully integrated company will be lower than those of companies which engage only in the profitable branches. Only if the profitability of each branch varied greatly, frequently, and in opposite directions from the others would the integrated company

²⁵ As a matter of fact, petroleum prices are not rigid but flexible. Space will not permit any discussion of the various ways in which price sensitivity may be measured. A most careful study of the subject may be found in Temporary National Economic Committee Monograph No. 1, *Price Behavior and Business Policy*, prepared by Saul Nelson and Walter G. Keim, of the U. S. Bureau of Labor Statistics, under the supervision of Prof. Edward S. Mason, of Harvard University. In this study the flexibility of wholesale prices of commodities was measured by 14 specific tests and ranked from I to X, with X the most flexible group. 10 prices of petroleum and petroleum products were studied. The 140 ratings of petroleum and its products were as follows: Group I, 2 ratings; II, 0; III, 3; IV, 9; V, 21; VI, 13; VII, 20; VIII, 17; IX, 28; X, 27. Over half the ratings were in the 3 groups with high flexibility, and less than 5 percent were in the 3 groups with low flexibility. Appendix I, *Measures of Price Flexibility*, table 26, p. 197.

²⁶ Temporary National Economic Committee Hearings, pt. 14, p. 7182.

²⁷ *Ibid.* pt. 17-A, pp. 10036-10043.

have an advantage, and that advantage would consist solely of having comparatively stable earnings, not higher average earnings over a period of years. Mr. Cook offers no evidence that the profits of the various branches of the petroleum industry do in fact vary greatly, frequently, and in opposite directions. It is more probable that they generally vary in the same direction, sharing in the gains and losses of national prosperity and adversity.

It is especially unfortunate that Mr. Cook emphasized the weak argument of offsetting losses and gains and ignored the ample testimony in the T. N. E. C. record about the real advantages of the integration in the oil industry.

Mr. J. Howard Pew, president, Sun Oil Co., testified:

The petroleum industry is necessarily an integrated one, whether through common ownership of all the activities or because of contractual relations between the several divisions of the industry. The producer of crude must have a market for it and must have a transporter to carry it to that market; that is, to the refinery. The refiner, in turn, must have a selling agency to dispose of his products and he must have means of transporting them to that agency. If producer, transporter, refiner, and marketer are all owned and operated independently of each other, their common interest brings about what has been called contract integration; they deal with each other through contractual arrangements based on prices, rates, and so forth. Each activity makes the best bargain it can with the other. The refiner, for example buys his crude as cheaply as possible and sells his products for the highest possible price. That means that every unit of activity in the line from the oil field to the filling station must have its own buying and its own selling organization. This is expensive.

But a greater difficulty is that among these multiplied buying and selling agencies there is nobody who has his eye on ultimate results—the final cost of the product and the price at which it can be sold to the consumer. Everybody is thinking of how to make the best deal with the man next to him in the line; nobody is worrying about the consumer down at the end of the line. Yet the consumer's ability to buy is bound to depend on the price at which the products can be offered to him. In the completely integrated unit of the industry an executive authority—president, chairman, executive director, board of directors, or what you will—has its eye always on that party down at the end of the line: How would he react if these various hagglers along the way should get costs and prices up beyond his reach? After all, the consumer is the boss; he makes or breaks the business; somebody must keep him in mind all the time; and the hagglers can't be expected to do it. They are too much engrossed with their own particular jobs; too many removes from the consumer.

Thus management knows that its job is to coordinate all stages and processes and bargainings to satisfy that consumer. To make the price a little lower, the quality a little higher, or the service a little better must be its constant effort.

* * * * *

Precisely because it is animated by this policy of consumer concern, integration sets the pace for efficiency. It sees the industrial picture as a whole, which no one of the units, operating independently and at several removes from the consumer, could do. Integration makes possible the reconciliation of all the conflicting interests along the line from the search for oil to the operation of the gasoline pumps at a thousand filling stations. It insures support for research, experiment, invention, improvement, in whatever department. Where differing interests as between independent departments would frequently tend to discourage improvements, the establishment of a common interest in general results works for better methods all along the line. It was not a wagon hauler, anxious to protect his job, who invented the pipe line; it was a refiner who wanted to get his crude a bit cheaper.

* * * * *

* * * competition among the companies has always been keen in the search for better methods, lower costs, higher qualities, and the general satisfaction of the consumer; and the industry as a whole has benefited by all the advances.

* * * * *

Integration, of course, is the essence of mass production, in which American industry has led the world. Mass production reduces costs, makes low consumer

prices. But mass production demands a mass market. To secure it the producer must turn out a product good enough to deserve a mass market. You might integrate until the cows come home, but if the product wasn't good enough or its cost was too high, you just wouldn't sell it. So integration coordinates all the stages of production in the common effort to get the right product. And when you have that right product, you must let the consumer know about it. You can't hide its light under a bushel. You must give it an identifying name, brand, or label, and then you must advertise it under that name or brand. After that, you must keep it good enough to deserve the claims you have advanced for it. A brand name is a valuable asset—if you live up to your claims for it and the customers' expectations of it. But it is a liability otherwise. If you advertise a mouse trap as the best in the world, you must keep it the best, even if you have to put out a new model every year. That brand name is your pledge to the buyer—your honor is staked on it. The integrated business can make sure that all its divisions and branches work in harmony to turn out a product always worthy of its name and fame. The oil company, adapting its service to all varying conditions of its wide flung market, produces gasoline and lubricants to fit season and region. The integrated company, constantly studying all phases of its marketing problem, recognizes these variations and adapts its products to them.²⁸

Dr. Robert E. Wilson, president, Pan American Petroleum & Transport Co., testified:

Splitting up the integrated companies "would be very harmful, because it is mainly the large integrated company that is doing the forward looking research and development work, which requires the assets of an integrated company and requires the interrelation, because many problems involve both manufacture and sale, or manufacture, sale, and transportation."²⁹

Mr. W. S. Farish, president, Standard Oil Co. (New Jersey), testified:

Integration is the uniting into one business of several of the stages through which a material passes before it reaches the ultimate consumer. The conditions under which integration is desirable are: (1) Large volume of business in a single commodity group; (2) highly specialized production, manufacturing, transportation and distribution techniques; and (3) substantial advantages (at some stages) in large-scale operation. These conditions characterize the petroleum industry, and it follows therefore that the relations between any one of the stages of the industry and the others next to it are peculiarly close. The refiner needs to be assured of his market. The marketer needs to be assured of his supply. Both need a steady flow of products for efficient operation. Neither is interested in other than the one major product and its related group of byproducts. Neither can transfer his specialized equipment to the handling of some different product. There is a high degree of mutual interdependence imposed by the facts. If such relationships are not provided by common ownership, they must be provided by contractual arrangements. When such close relationships take the integrated rather than the contractual form, there is no need for secrecy or tactical maneuvering between the parties concerned. Integration permits the full exchange of information and experience among specialists in the several divisions of the company.

Integration by and of itself does not, of course, automatically produce earnings. But because of the close dependence of one phase of operation on another in the oil business, the integrated form of organization does help very greatly to insure the continuity of the enterprise and to stabilize such earnings as the skill of management is able to produce. Not only the normal operating schedule, but particularly the capital outlay need to be planned in advance; such planning can be more effectively accomplished by an integrated company than a nonintegrated one. Because of the rapid changes in oil technology, it is necessary constantly to spend money on research and to invest capital in replacement in order to keep abreast of competition. Since the inherent risks of the oil business are substantial, conservative investors as distinct from speculators, want to have some assurance of continuity and stability of earnings before they put capital to work. Without integration oil companies would not have been able to spend such large sums on research and improvements. Integration, therefore, bears a very direct relation to both progress and investment.³⁰

²⁸ Temporary National Economic Committee Hearings, pt. 14, pp. 7188-7191.

²⁹ Ibid., pt. 15, p. 8373.

³⁰ Ibid., pt. 17, pp. 9748-9749.

If even the sworn testimony of such witnesses is suspected of bias, it might be noted that some of the advantages of integration were pointed out as long ago as 1907, in the Report of the Commissioner of Corporations on the Petroleum Industry. The report said: "Each of the stages in the industry can be more economically conducted when it works in entire harmony with every other stage, and such entire harmony can be secured only through a single control."³¹

It is a mistake to assume that integration is found only among large companies. Although the advantages of integration are most important for large companies whose great investments require the assurance of supplies and markets, integration is also found among smaller companies. Mr. Pew stated to the T. N. E. C. that there were 11 oil companies which were wholly or partially integrated.³² Among these companies there are many whose assets put them far below the ranks of the 20 majors. For example, some small refiners produce their own crude and some jobbers have their own filling stations.

At the other extreme from the integrated companies, whether small or large, there are many prosperous units which specialize narrowly in a particular activity. Examples of such specialists are geophysicists, drillers, refinery construction companies, transport truckers, and the like. There is no reason to assume that the petroleum industry naturally falls into the four divisions of production, transportation, refining, and marketing. Any such distribution into four divisions is purely arbitrary. As the existence of narrowly specialized units shows, the many activities of the industry could be broken down into a great number of divisions. These specialists are sometimes employed by major companies as well as by smaller concerns. Mr. H. H. Anderson, vice president, Shell Oil Co., Inc., testified that there has been a definite trend toward the use of contractors by the operators in the industry. He said:

The definite trend toward increased use of contractors by the operators in the industry has continued. It has aimed principally at the promotion of stability of employment amongst construction and maintenance workers. In certain areas local labor conditions have made the practice expedient. It has in most cases proved beneficial and profitable to all parties concerned. It has been found advantageous also to contract jobs where the work involved is of such a magnitude as to justify bids on "turn-key jobs," i. e., equipment delivered in an operating condition, such as derricks and rigs, and in cases where the work is urgently required and sufficient regular forces or competent local labor is not available. The relative amount of such contract work is estimated to have increased between 25 and 30 percent from 1929 to 1938.

Much of the work described below has been or is increasingly being handled by specialty contractors in certain areas:

Producing: Drilling of wells, pulling of wells, construction of field plants and pipe lines, other construction jobs, paint jobs, special repair work, teaming and trucking, boating, etc.

Pipe lines: Construction, special repair and renewal of pipe lines, erection of buildings and steel tankage, etc.

Refining: Construction and special repair of operating equipment and facilities, teaming, trucking, etc.

Marketing: Installation of station dispensing equipment, maintenance work, mechanical repair work, painting of service stations as well as bulk plant properties, etc.³³

In recent years, the larger companies have generally withdrawn from the operation of filling stations. The oil industry has room for

³¹ Prices and Profits, pt. II, p. 635.

³² Temporary National Economic Committee Hearings, pt. 14, p. 7245.

³³ Ibid., pt. 16, p. 9256.

large and small, integrated and nonintegrated. In fact, many of the complexities of competition in the petroleum industry come from the fact that there are so many smaller enterprises beside the great integrated companies.

THE AMERICAN PETROLEUM INSTITUTE

Mr. Cook charges that the American Petroleum Institute is "essentially engaged in activities to more effectively assist the major oil companies in controlling the petroleum industry," that "the work of the institute is largely accomplished through industry committees" whose membership "indicates very conclusively that the majors do predominate," and that the institute publishes "a weekly statistical bulletin which covers crude oil production, runs to stills, stocks of crude oil and refined petroleum products, imports and exports," and which serves "the purpose of lessening competition and making integration more effective and profitable."

These contentions are not supported by any testimony before the T. N. E. C. which heard no such charges and which had ample opportunity to question members of the institute about its activities. As the 20 large companies occupy an important position in the industry, it is only to be expected that they would have many members on institute committees. The fact that there are also many representatives of the independents on the committees should be ample protection against the use of the institute to further the interests of the majors at the expense of the independents. It may be remarked in passing that most of the institute's committees are technical committees, dealing with the problems of a scientific or engineering nature.

The weekly statistical bulletin cannot be said to be a means of lessening competition and making integration more profitable. The information is not secret; non-members of the institute may subscribe to the statistical bulletin for \$12.50 per year; the information is available to buyers and sellers alike and to the newspapers, some of which publish summaries of it as commercial information. Similar information for other industries is commonly published by Government bureaus, other trade associations, and commercial reporting agencies. Mr. Cook quotes the director of the institute's statistical department as suggesting in 1939 that runs to stills be restricted to facilitate a reduction of gasoline stocks, and remarks that this statement obviously had an effect on the price structure. Mr. Cook does not endeavor to prove this claim; in fact, the runs to stills and gasoline stocks remained high and the price structure continued weak. The size of gasoline stocks was often discussed during this period, both in the trade journals and in the general press. Whether for better or worse, gasoline stocks cannot be controlled by publishing the views of the institute's statistician.

In his chapter on "Basic Factors," Mr. Cook has failed to establish his points. Control is not highly concentrated; and concentration is not increasing. Integration has real advantages for the economical supply of products for the use of the consuming public. The American Petroleum Institute's activities are not carried on for the benefit of the majors and at the expense of the independents. Mr. Cook's following chapters, on production, transportation, refining and marketing, do not contain any additional support for the arguments he has advanced in this chapter.

COMMENTS ON MR. COOK'S CHAPTER ON PRODUCTION

Mr. Cook's principal contentions in his chapter on the production branch of the industry are as follows: (1) Proration is not true conservation. (2) Control of production is unnecessary because there is "no imminent danger of exhaustion of the petroleum reserves of the United States" and "if the reserves should ultimately become exhausted, there exist practically inexhaustible supplies of other materials from which gasoline could be produced at prices only slightly higher than the prices now prevailing for petroleum products." (3) Proration "works a hardship on the nonintegrated operator and works to the advantage of the majors who have many sources of crude oil." (4) The major companies have a greater percentage of crude oil reserves than their percentage of crude oil production. Mr. Cook infers that the major companies deliberately hold back production. (5) The policy of major companies is to lease land "and then decline to drill until oil is discovered elsewhere." (6) "When an independent has a minority interest in a field and wants to drill his own well rather than pool his interests, or sell them, he usually has trouble in getting a permit to drill." (7) "Since the majors have a virtual monopoly of crude oil pipe lines, the only practical overland means of transporting oil, they are able to post uniform, noncompetitive prices for crude oil purchased in a particular field, and the crude oil is definitely sold on a buyer's market."

These contentions will be discussed separately, but first it is desirable to present a brief background of the conservation problem to supplement Mr. Cook's discussion of this subject.

The petroleum conservation problem cannot be understood unless certain technological and legal aspects are kept firmly in mind. These peculiarities of the petroleum problem make it considerably different from the conservation problem of other energy resources, of our forests, and of agriculture.

Three circumstances combine to bring the interests of the various producers into conflict and to encourage waste: (1) Under common law, as developed by the courts in this country, the producer who brings the oil to the surface is the owner of the oil. (2) An oil well can drain the underground petroleum reservoir over a considerable distance, a distance often much greater than the property owned by the proprietor of the land on which the oil well itself is located. (3) The bulk of our land overlying petroleum reservoirs is in the hands of many private individuals.

The conflict among individual owners of oil land or oil wells and the waste of an irreplaceable natural resource have resulted from the so-called "rule of capture." Our courts have established as our common law that oil and gas belong to the owner of the well from which they are produced regardless of whether or not they have migrated from a neighbor's land. The rights of the neighbors in the oil which

was originally located under their land, the so-called "correlative rights," are not recognized by the common law. State legislation has been enacted to recognize the correlative rights, to do equity among the several claimants, and to promote conservation. Under the rule of capture there was frenzied competition among the various oil wells in a given field to bring to the surface as much oil as possible in the shortest possible time.

This hurried exploitation of an oil field resulted in a physical waste of the oil reserve. In most of the oil fields of the country, the oil is brought to the surface by the reservoir energy. Unless steps are taken to preserve this energy, it may be used up before the entire oil pool is drained. In the underground reservoirs a considerable amount of gas is under pressure in the petroleum and constitutes an important part of the reservoir energy. Unless steps are taken to prevent it, this gas tends to come out of solution and flow from the oil well. With the hurried exploitation of oil fields under the unrestricted influence of the rule of capture, the premature escape of gas resulted in leaving in the reservoir much inert petroleum incapable of rising to the surface without artificial aid. This loss of gas was characteristic of the early period of operation of an open-flow well or gusher. The loss of gas affected not only the natural lifting power of the oil but also its ability to move through the sands from its original location to the bottom of the well.

Two brief statements of the essence of petroleum conservation were given to the T. N. E. C. One witness, Mr. Ralph J. Watkins, the economic adviser on the staff of the National Resources Planning Board, said that the rule of capture needs "to be completely displaced by a thoroughgoing law of ownership in place, which would allot to each producer that proportion of the oil and gas in the common reservoir which underlies the land he owns or controls."¹

Another witness, Dr. Joseph E. Pogue, a student of the petroleum industry who appeared before the Committee at the request of Mr. Thurman Arnold, Assistant Attorney General, testified—

Proration has been described in a single phrase: "No more gushers."²

By preventing gushers, reservoir energy is conserved. Moreover, one of the techniques employed by the proration authorities is to base their limitation of output from an oil field upon observations of reservoir energy. By watching the pressure within the reservoir, the proration authorities can determine when production is proceeding too rapidly. Limitation of production down to this point clearly serves conservation purposes. To be sure, the oil which would be left in the reservoir under conditions of flush production is not permanently lost, but its eventual recovery can take place only at a much higher cost. It makes little difference whether the preservation of reservoir energy is justified by calling it prevention of physical waste or prevention of excessive cost of recovery. The economic advantage of preserving reservoir energy is so clear that it is not open to effective challenge.

The term proration has come to be applied to the States' oil conservation programs because the States limit the output of the individual wells within an oil field and limit the output of the various fields within the State by orders which allocate or prorate the output. The quota allocated to each oil well is called its "allowable" and this

¹ Temporary National Economic Committee Hearings, pt. 17; p. 9512.

² *Ibid.*, pt. 14, p. 7413.

allowable constitutes the maximum amount which that oil well may legally produce within the period. The Federal Government has no direct part in establishing quotas for the several oil-producing States or for individual wells. The Bureau of Mines of the Department of the Interior prepares monthly estimates of the market demand for crude petroleum by States, and these estimates are used by the State proration authorities as one of their guides in determining allowables.

PRORATION AND CONSERVATION

Mr. Cook makes a distinction between conservation and stabilization, saying that, true conservation "of oil may be defined as an avoidance of waste in its recovery or use," and that true conservation "should not be concerned with production control based upon market demand." The implication here is that proration does not embody any of the elements of conservation, or prevention of waste, and that it is solely designed to restrict production in accordance with market demand. Testimony submitted to the T. N. E. C. does not support this contention. A statement prepared by Mr. Harold B. Fell on behalf of the Independent Petroleum Association of America contained the following comments concerning production of oil from stripper wells:

There are many of these natural laws which have thus necessitated the application of statute laws and have also been a determining factor in the development of economic laws. In illustration of this, one might point to the stripper wells of the Nation or the wells of settled production. In these wells, there is no longer enough gas left or sufficient water pressure to bring the oil to the well. The oil can only be obtained by secondary methods of recovery. These are expensive processes. They add to the cost of the oil. Eventually, it may be expected that every well will become a stripper well or go dry. In most of the stripper well areas the wells must be operated continuously. If they are capped or allowed to remain idle for a long period, salt water intrudes and the deposits of oil beneath those wells may be entirely lost or its recovery made economically impossible.

It is true that some of these wells could be redrilled or made to produce by the application of some of the modern methods of recovery, but when the maximum recovery of a well is only a few barrels a day or as little as one-eighth of a barrel (as is the case in many instances) it is self-evident that the investment in new equipment would not be recovered in any reasonable period. Such wells, once closed, may be considered lost and the oil they reached as impossible of recovery.

The force of natural law has made it necessary for the States to adopt regulatory legislation which will assure these stripper wells their proper share in the production program. While it is true that the large flowing wells could entirely supply the total demand of this country for a brief period, during which time low crude oil prices might be expected, this would mean the loss to the Nation of the greater part of our known petroleum reserves, which underlie these wells of settled production.³

The Honorable Ernest O. Thompson, member of the Texas Railroad Commission, also stated that proration based on market demand was necessary to prevent waste occasioned by shut-downs of stripper wells. His testimony was as follows:

We have in Texas about 50,000 of our 67,000 wells that are called stripper wells. They produce less than 5 barrels per day, and we know from experience and from records and studies made by the Federal Government that it costs around \$1 a barrel to operate those wells. Those wells are owned and operated largely by small independent operators, many times farm-outs, some fellow runs them himself, and if you produce oil at less than it costs to operate it, those people have no reserves in dollars to keep them going, and any time the price of oil gets below the point where those wells, 150,000 of them in the Nation, producing 5 barrels

³ Ibid., p. 7554.

or less, have to be plugged and abandoned, then you would be causing the greatest waste possibly known. Those wells are the backlog of our oil-producing industry and you must protect the little stripper well. Everything that we have heard in conservation, so far as I know, has been to conserve the stripper wells.

Now, when the price dropped so low that the stripper well cannot operate, then you are driving out these two or three hundred thousand wells, certainly 200,000 of them that could not operate, and cutting off forever the two or three thousand barrels a day that they produce.⁴

Mr. Glenn E. McLaughlin, assistant professor at Hunter College and author of portions of the report entitled "Energy Resources and National Policy,"⁵ prepared by the National Resources Committee, concurred with this view, saying that: "The abandonment of wells because of low price of crude has been estimated to constitute a considerable economic loss."⁶

In his testimony before the T. N. E. C., which was largely concerned with a description of the methods used in preparing forecasts of market demand, Dr. Alfred G. White, chief economist, Petroleum Economics Division, Bureau of Mines, stated that production restricted through proration on a basis of market demand served to prevent waste by eliminating unnecessary storage above ground.⁷ The waste referred to by Dr. White is of two kinds: the waste of capital caused by investment in unnecessary storage facilities, and the losses resulting from evaporation which, of course, are irrecoverable at any cost. Mr. Fell also said, in his statement submitted for the record, that an unbalanced condition of supply and demand caused waste by diverting petroleum products into inferior uses. His statement on this point was as follows:

Out of all this there grew a recognition of the fact that any conservation program for the petroleum industry must be extended to include provision for a balance between supply and demand. The oil-producing States and the industry alike thus came to understand that economic law also plays a vital part in the avoidance of waste.

An irreplaceable natural resource must not be wasted. When there is an excessive supply of the products of such a resource, these products are diverted into inferior uses and may come into competition with the products of other natural resources demoralizing both industries, without real or lasting benefit to the ultimate consumer. This constitutes one of a number of types of waste. The petroleum industry has been definitely given to understand that wastes will not be tolerated. On this economic plane the petroleum industry is confronted with two conflicting forces. On the one hand the consumer wants the most possible for the least money. On the other hand the advocates of conservation insist that petroleum shall be so produced as to avoid all waste. The industry has been endeavoring to meet both of these demands.⁸

In view of the above testimony, it is clear that the distinction made by Mr. Cook between "true" conservation and stabilization resulting from restriction of production on the basis of market demand is oversimplified. Proration based upon market demand does prevent waste, both physical and economic, and therefore has elements of true conservation under his definition.

Much of what has been said already serves to refute Mr. Cook's implication that conservation is unnecessary, but some attention should be given to the statements from which this implication is derived. Mr. Cook refers to a study by Mr. Stanley Gill⁹ who was

⁴ Ibid., pt. 15, p. 8225.

⁵ H. Doc. No. 160, 77th Cong., 1st sess.

⁶ Temporary National Economic Committee Hearings, pt. 17, p. 9531.

⁷ Ibid., p. 9593.

⁸ Ibid., pt. 14, p. 7555.

⁹ A Report on the Petroleum Industry, Gulf Publishing Co., Houston, 1934.

reported to have said that there is no imminent danger of exhaustion of petroleum reserves in the United States and that there are inexhaustible supplies of other materials from which gasoline could be produced at prices only slightly higher than the prices now prevailing. Mr. Cook also states that Mr. Farish, president of Standard Oil Co. (New Jersey), supports this latter conclusion.

The statement that there is no imminent danger of exhaustion of our crude oil reserves does not provide an argument for abandoning conservation methods, because it is desirable to prevent any waste of a natural resource regardless of its size. This view was expressed by Mr. Ralph J. Watkins, economic adviser, National Resources Planning Board, in his testimony before the T. N. E. C., when he was comparing the reserves of bituminous coal and crude oil.¹⁰

Mr. Cook's statement that "there exist practically inexhaustible supplies of other materials from which gasoline could be produced at prices only slightly higher than the prices now prevailing for petroleum products" is inaccurate. There is ample testimony in the T. N. E. C. hearings to the effect that the cost of producing gasoline from coal is three or four times as great as the cost of production from crude oil.¹¹ Furthermore, the statement that Mr. Farish supported Mr. Cook's conclusion regarding comparative production costs is also inaccurate, as reference to his source will show.¹² All Mr. Farish said was that gasoline could be produced from soft coal for approximately 12 cents per gallon. This figure would be compared with a cost from crude of 4 cents to 5 cents.

EFFECT OF PRORATION ON INDEPENDENT PRODUCERS

Mr. Cook states that, "Proration works hardship upon the nonintegrated operator and works to the advantage of the majors who have many sources of crude oil." With regard to independent producers, his specific complaints are as follows: (1) Proration increases the cost per barrel, because a longer time is required to amortize the investment. (2) Proration often forces the small operator into bankruptcy since he can operate his wells in only a limited way and major interests then have an opportunity to buy these properties at special prices. (3) Under proration the operator having a limited number of wells is progressively subjected to lower allowables. (4) Proration usually assures the maintenance of desirable prices and tends to raise prices. (5) Effects of proration may reach back to oil exploration and conceivably limit that function. (6) Allowables are still based primarily upon a more or less constant allowable per well. Mr. Cook also states that proration operates to the disadvantage of independent refiners because it limits the production from their own wells or those of independent producers.

With regard to production costs, it is possible that the immediate effect of proration in flush fields may be to increase the production cost per barrel, because the flow is restricted. The ultimate cost per barrel will be decreased, however, since the effect of additional barrels recovered in lowering unit costs will more than offset increases in

¹⁰ Temporary National Economic Committee Hearings, pt. 17, p. 9513.

¹¹ Mr. McLaughlin, Temporary National Economic Committee Hearings, pt. 17, p. 9536; Mr. Watkins, *ibid.*, p. 9580. Mr. Watkins later sent the Temporary National Economic Committee a letter from A. C. Fieldner, Chief, Technologic Branch, Bureau of Mines, which confirmed his estimate of four times the cost of gasoline from crude oil (*ibid.*, pp. 9956-9957).

¹² U. S. Cong., Petroleum Investigation, hearings on H. R. 441, 1934, p. 748; also p. 752.

capital costs resulting from a lengthening of the period of recovery. The testimony of Dr. Joseph E. Pogue serves to substantiate this view.¹³

It is difficult to imagine how proration would cause independents to go into bankruptcy in view of Mr. Cook's statement that proration brings stabilized crude prices and tends to raise them. Perhaps he is referring to a field where proration was put into effect after the field was partially developed, such as the East Texas field. In that field, however, it is likely that there were more bankruptcies during the period prior to proration when oil was selling for 25 cents per barrel than there were after proration was put into effect and prices of crude increased. No evidence regarding bankruptcies of independent producers was given to the T. N. E. C.; evidence was given to show that the number of independent producers in Texas is increasing. Mr. Farish stated:

When the independent producer makes any complaint, his chief grievance is that conservation restricts him from exploiting and producing rapidly all the oil that he has. As indicated above, the small independent producer is likely to take a short-run viewpoint; he does not always like to play the game according to the conservation rules. This feeling, however, does not prevent numerous new producers from entering the oil business. In the State of Texas, for instance, operators of oil wells are required to file reports with the State Comptroller, and I offer for the record the following certified analysis of the number of operators doing business in Texas as of January 1 for the years 1930 to 1939:¹⁴

Year	Number of operators	Year	Number of operators
1930.....	1, 152	1935.....	2, 479
1931.....	1, 194	1936.....	2, 667
1932.....	1, 912	1937.....	2, 780
1933.....	2, 242	1938.....	2, 835
1934.....	2, 306	1939.....	3, 312

Mr. Cook's implication regarding allowables is that the independent producers are subjected to lower allowables than the majors. This argument does not harmonize with statements made elsewhere by him to the effect that the majors produce their reserves more slowly than the independents. A lower rate of production in relation to reserves would indicate that allowables of majors are restricted in favor of the independents. Mr. W. S. Farish, president of the Standard Oil Co. (New Jersey) threw some light on this question when he said:

The subsidiaries and affiliates of the Standard Oil Co. (New Jersey) do not produce their reserves as fast as some other firms. One important reason for this situation is that these companies are making a genuine effort to use engineering standards in the development of oil fields so far as competitive conditions permit. They are seeking optimum output from all fields. They expect to be in business many years; it is to their advantage to have a supply of oil at as low a cost as possible for a long time to come; hence, they have every reason to produce according to the best engineering standards.

Another reason why the oil production of major companies is not so high in relation to their reserves as independent oil production is in relation to independent reserves, is that in granting exceptions to spacing rules and in setting allowables in fields in which independent producers predominate, State regulatory bodies do not treat major companies as well as they do the independent operators. The small independent operators are numerous. Not all of them are wealthy men,

¹³ Temporary National Economic Committee Hearings, pt. 14, p. 7442.

¹⁴ Ibid., pt. 17, p. 9934.

They are more anxious to obtain their money now so that they can spend it while they are living rather than to pass it on to their grandchildren. As a practical political matter, the State regulatory bodies probably recognize that the corporation can wait better than the people who have votes to cast. This is only human. When a major company is discriminated against too flagrantly, it can and does resort to the courts.

In spite of the practice of cashing in on some of his discoveries and selling them to a major company, thus increasing the major company's proportion of total proved reserves, the small independent has really enlarged slightly his proportion of proved reserves in recent years. By and large, the independent has held about the same proportion of proved reserves for the last 20 years, but for the year 1938 as compared with the year 1937 the independent has increased his share of total proved reserves.¹⁵

Mr. Thompson's testimony, quoted above in connection with stripper wells, also indicates that the small operators are protected, as restriction of production applies only to flush fields.

The statements that proration on the one hand tends to raise prices and on the other hand tends to limit exploration for oil are inconsistent. Obviously, if prices are higher because of proration, exploratory effort should increase. Furthermore, there is no reason for concluding that over the long run proration brings about a high price for crude.

The initial effect of proration on prices may be, as in the case of a flush field like East Texas, an advance. On the other hand, proration adds appreciably to the total recovery of crude oil, thus lowering the ultimate cost per barrel which in turn tends to lower the price. Without proration, quite the opposite result would appear. The initial price would be lower due to the heavy flow of wells during first stages of their life, but the ultimate recovery would be less and the cost of production per barrel greater. The basic fact is that, over a period of time, proration increases the supply of crude oil and tends to lower prices, not raise them.

It is probably fair to state that proration tends to reduce the wide fluctuations in price which accompany flush production. This, in turn, tends to increase exploratory effort, even though the average crude price may be lower; the greater price stability reduces the risks involved and makes bank loans more easily obtainable. The growth in the number of operators and in the size of petroleum reserves indicates that exploratory effort has not been reduced by proration.

Mr. Cook's statement that proration "allowables are still based primarily upon a more or less constant allowable per well" is not accurate. In his testimony before the T. N. E. C., Dr. Joseph E. Pogue said, regarding allowables, "the course of evolution is from those faulty methods based upon the well itself, which put a premium on too much drilling and investment, to those involving some combination of number of wells and acreage, which is the present status, with the concept moving in the direction of more advanced procedures involving the recoverable oil itself".¹⁶ This view was also shared by Mr. Robert C. Knox, of El Dorado, Ark.¹⁷

Mr. Cook also complains that an independent refiner is at a disadvantage because proration limits the production from his own wells or those of independent producers who supply him with crude oil. While the answer to this complaint does not properly belong in a discussion of producing, it involves a description of regulations which apply to the production division of the business.

¹⁵ *Ibid.*, pp. 9691-9692.

¹⁶ *Ibid.*, pt. 14, p. 7121.

¹⁷ *Ibid.*, pt. 15, p. 8570-8571.

In all States where production of oil is regulated by law such regulation includes the requirement of "ratable takings." This requirement is designed to prevent purchasers of oil in a given field from taking oil from their own wells at the expense of other producers in the field and serves to provide an equitable distribution of the total purchases among the producers, generally in accordance with their allowables. Therefore, neither major companies nor independent refiners can obtain all the oil they might like to have from their own wells, but there is no regulation which prevents either majors or independent refiners from purchasing oil from independent producers, which, of course, is what they do.

RESERVES OF CRUDE OIL

Much of Mr. Cook's chapter has to do with the production of the major companies relative to their reserves of crude oil. He draws the inference that the majors deliberately produce less crude oil in relation to reserves than do independents.

Mr. Cook's inference is based upon the testimony of Mr. E. DeGolyer, an independent petroleum producer, geologist, and petroleum engineer.¹⁸ There is nothing in Mr. DeGolyer's testimony to the effect that major companies deliberately held back production. He merely said that major companies did produce their reserves more slowly than independents and that he didn't know why.¹⁹ Nor did he say, as attributed to him by Mr. Cook, that major companies "maintain these reserves to protect their other investments in the integrated form." He did say that independent producers have no real reason to have much of a feeling about maintaining reserves.²⁰

Mr. Cook also states that the difference between the percentage of total reserves and the percentage of total production of the major companies "is made possible through their control of the crude oil market through pipe lines." This statement is not substantiated. No connection is apparent between the alleged control of pipe lines and the disparity between reserves and production.

In his section on oil discovery and production methods, Mr. Cook emphasizes the fact that independents do a large part of the exploratory work, but that most of the crude oil reserves are owned by the majors. Apparently Mr. Cook believes that this indicates the dominance of the majors to the detriment of the independents. Mr. Cook said elsewhere that "very few independent producers are engaged in other divisions of the industry," whereas majors by definition are engaged in all branches. Independent producers, therefore, have little need for large crude reserves, since their sole interest is to dispose of the crude oil. On the other hand, majors have refineries and established markets for which a continuous supply of crude must be obtained. After the discovery well has been completed, but before the field has been developed, independents frequently sell all or part of their holdings to major companies, because many of them do not wish to risk large amounts of capital relative to their means. They prefer to cash in on their discoveries and turn to new ventures elsewhere.

¹⁸ Ibid., pt. 14, p. 7389-7423.

¹⁹ Ibid., p. 7393.

²⁰ Ibid., p. 7394.

Much of Mr. Cook's section dealing with oil discovery is based upon testimony of Mr. DeGolyer before the T. N. E. C. Throughout the discussion, the implication is that independent prospectors work under handicaps as compared to the majors but in spite of this they do very well. The statement is made through reference to Mr. DeGolyer's testimony²¹ that "independent prospectors, known as 'wildcatters,' are willing to take chances on a venture whose odds have been from 30 to 40 against striking oil. On the other hand, under the best modern methods used by majors in special areas, the odds are as low as 8 to 1." It should be pointed out that when presenting the figures on odds Mr. DeGolyer was referring to all prospectors and not to independents as compared with majors. Furthermore, the odds of 30 or 40 to 1 applied to all prospectors during the history of oil exploration, while the lower odds applied to a more recent period and assumed the use of the most modern techniques. In connection with oil discovery, it should also be said that the term "wildcatter" applies to any prospector, whether major or independent, who drills a well in unproved ground, and is not restricted to an independent prospector.

As to the assertion that majors use more scientific technique and equipment than do the independents, Mr. DeGolyer's comments concerning the availability of such techniques to the independent are of interest:

* * * There are many competent and independent geologists whose services may be engaged in order to assist in selecting the site; there are many competent and independent geophysical service organizations who can map the structure of the prospect in order to determine whether or not a trap is present; there are scores of competent and independent lease brokers who can take the leases; there are dozens of competent and independent drilling contractors who will engage to drill the well to the required depth and complete it properly and in a workmanlike manner. There are independent service organizations to case, cement, perforate, electrically log, or perform any other required service. Scores if not hundreds of wells are being drilled currently at any time with the assistance of these independent service organizations of unquestionable competence.²²

LEASING OF OIL LAND

Mr. Cook's principal contention regarding leasing practices of the majors is that "their policy is to lease this land and then refuse to drill until oil is discovered elsewhere." No attempt is made to substantiate this charge, and testimony presented before the T. N. E. C. contains no grounds for this assertion. In view of the dominant position that leasing has played, and is still playing, in the development and day-to-day operation of the petroleum industry, and in view of the fact that leases are familiar to many people in different walks of life, it is difficult to see how any company or group of companies could afford to let such a practice exist. If such practices ever did exist, it is likely that they were shortlived, because the keen competition for leases would make them very costly to the persons who employed them.

Some attention is also given by Mr. Cook to changes in the Form 88 lease which he says were instituted by the majors to the detriment of the landowner. Apparently the source of this information was the testimony of Mr. Robert C. Knox before the T. N. E. C. The source reference is attached to the first sentence of the discussion on

²¹ Ibid., pp. 7664-7665.

²² Ibid., p. 7665.

the Form 88 lease, while the remainder, which is not documented, contains the complaints concerning practices of majors indicated above. An examination of all the testimony submitted by Mr. Knox reveals that he did not charge that "the major oil companies have been instrumental in changing this lease." The comments of the witness dealt generally with oil companies which lease land for purposes of drilling, and at no time did the witness purposely draw a distinction between independents and majors. In fact, Mr. Knox made his position very clear at the outset when he said:

Nothing which I shall say is intended to question the good faith of any of the people engaged in the business of acquiring oil and gas leases or the methods employed or the types of the contracts which they use. I am merely trying to point out the effect of some of the newer forms of leases which I think are being used because of this tremendous overproduction of oil and the potential supply, and that many in the industry feel that these changes in the types of leases have become necessary for their protection.²³

DRILLING PERMITS

The case of John W. Dailey is used by Mr. Cook as a basis for generalizing about the independent's difficulty in obtaining drilling permits. He contends that the independent "usually has trouble in getting a drilling permit." He makes a general allegation and offers only one instance in its support. He states particularly that a drilling permit was refused to Mr. Dailey by the Texas Railroad Commission through the influence of majors, and that Mr. Dailey was therefore prevented from drilling on a 20-acre tract in the Old Ocean field which, according to Mr. Cook, was controlled by major interests.

The statement that the Old Ocean field was controlled by major company interests is inaccurate, because all the interests in the Old Ocean field were independent.²⁴ Regarding the complaint that Mr. Dailey was prevented from drilling, Mr. DeGolyer testified:

Mr. Dailey was offered, as I understand from him, and as I understood at the time, an opportunity to combine 20 of his acres with 20 acres of the partnership in order to get the 40-acre basis and drill the well. That was done probably in more than a dozen cases within the field. In all of these other cases, which I cite but one, the land was already under lease, so it was only a combination of the royalty interests, but in the one other case where the land was not under lease, this same combination that was offered to Mr. Dailey was carried through.

I have no other comments to make on this matter, except to say that in my opinion equity was offered to Mr. Dailey, and that this is just one of the type of problems that will recur from time to time in an attempt to produce fields as units.²⁵

CRUDE OIL PIPE LINES

In Mr. Cook's summary and conclusions on production, the statement is made, "Since the majors have a virtual monopoly of crude oil pipe lines, the only practical overland means of transporting oil, they are able to post uniform, noncompetitive prices for crude oil purchased in a particular field, and the crude oil is definitely sold on a buyer's market." Discussion of these charges properly belongs under the heading of crude oil pipe lines where it is discussed at greater length, but it is desirable to show here that the presence of uniform prices is proof neither of monopoly nor of competition. Uniform prices may

²³ Ibid., pt. 15, p. 8252.

²⁴ Ibid., pt. 14, p. 7293.

²⁵ Ibid., p. 7415.

occur under either set of conditions. Where several buyers are competing for the same kind of crude oil in a given field, prices should be the same to all sellers, otherwise the producers would sell only to the highest bidder. If the purchasers got together and agreed upon a price, uniform prices might also prevail. On the other hand, discrimination in prices among sellers would suggest monopoly on the buying side, as it would mean that one buyer was strong enough to purchase from one producer at one price and to pay a different price to others. This is a situation which the sellers would not tolerate if they had any control over it. It is fair to ask what Mr. Cook would have said had there been evidence of discriminatory prices rather than uniform prices.

Perhaps the most satisfactory answer to Mr. Cook's complaint that prices of crude oil in a given field are uniform is the fact that the T. N. E. C. hearings include no evidence of complaints on this score by independent producers.

Nor does the substantial ownership of trunk pipe lines by majors constitute proof of monopoly. The fact is that most of the pipe lines are in competition with each other, as a glance at chart XIV in the appendix to the monograph will show.²⁶ The fact that independents use the pipe lines to a small degree relative to the total is also not damaging evidence. The important fact so far as the independent producer is concerned is that interstate pipe lines have a common carrier status and are regulated by the Interstate Commerce Commission. They are also regulated by many of the States through which they pass. The common carrier status assures the independent producer that the difference between the price of crude at one end of the line and at the other will reflect only the transportation charges. Because of this, he always has the choice of selling his crude at the well head or at some other market of his own choice. The independent's right to ship is valuable to him whether he elects to ship or elects to get parity prices in the field. In practically all cases, however, independent producers sell at the well head since they prefer to let someone else provide the capital necessary to seek the markets. The choice as to where he will sell his crude is open to him, nevertheless. If the independent producer elects to sell at the destination of the crude, he must, of course, comply with the minimum tender requirements of the pipe lines which are established at amounts sufficient only to prevent excessive diffusion of the different kinds of crude oil passing through the pipe line. The size of the minimum tender requirements was one of the chief complaints of Mr. Cook in his chapter on pipe lines. These charges are answered in the discussion of that section.

GENERAL COMMENTS

Before leaving the discussion of crude oil production, one important inference should be refuted. The general theme of this and other sections of Monograph No. 39 is that independents are in one line of trenches facing with drawn pistols another line of trenches occupied by majors who are armed with cannons. It is perhaps unfortunate and certainly misleading to paint a warlike picture of the relations between independent producers and major companies, because it is

²⁶ TNEC Monograph No. 39, chart XIV, facing p. 80; see also Temporary National Economic Committee Hearings, pt. 15, chart facing p. 8543.

common knowledge that these groups are not best described by a scene presenting them ready for battle. On the contrary, there is considerable cooperation between them and each group realizes that depression and prosperity will treat them alike. The majors willingly admit that the independent is an important and necessary part of the production division of the business and have no desire whatever to eliminate him from the industry. Mr. W. S. Farish made these comments before the T. N. E. C.:

The credit for the discovery of America's oil fields goes to the small exploratory enterprise rather than the large organization. It is the individual, the small company, the so-called independent, the itinerant wildcatter who has found America's oil. This has been true in the past and it is true today. In my judgment, it will be just as true 10 years from now. The truth of this statement, that the discovery of new oil fields is usually made by the small fellow rather than the integrated company, is borne out not only by the statistics kept by our own company, but by the observations of others outside our organization.²⁷

There actually is much cooperation between majors and independents in prospecting for oil, as is shown by the following testimony:

Mr. FARISH. That may be true; but the so-called small man seems to be growing larger, and the ability of the so-called small man to join with other small men seems to be facilitated, to the end that this discovery of new areas by the independents—I go back to the word "independent"—is just as good today as it ever has been.

The VICE CHAIRMAN. They block out an acreage and then get other people to help contribute the money to make the exploration.

Mr. FARISH. Yes, sir. To give you one practice that is common in the oil country, some entrepreneur—I don't like to call him a promoter, but "promoter" is probably a little more familiar to the oil man than the other one—some promoter will get the idea either from the study of geology or from getting a hunch, if you will, or a tip from somebody who had studied the geology and maybe has used new geological methods, that a certain area is favorable, and he looks at that area and he sees that it is a very divided ownership. In other words, two or three or four major companies will own some acreage on it; some of it will be open, and some independents will own some. This fellow says, "I am going to promote a well on that prospect." The well may cost 10 thousand, 20 thousand, even 50 thousand dollars, depending on the probable depth you have to go to find oil.

So this promoter goes to this company and that company, another one, and so on, and he says, "I want to drill this prospect. I have 160 acres there of my own. Obviously, I can't drill a wildcat well on 160 acres, so are you interested in seeing the prospect drilled," and by one way and another he will get contributions of acreage from other owners and he will get some contributions of what we call in the industry dry-hole money. In other words, somebody will say, "I don't want to give you any acreage but I will give you \$5,000 to pay for a dry hole if you drill it there, in order to prove whether this prospect is productive or not."

We will assume that this promoter gets several hundred acres by donation, several thousand dollars, fifteen or twenty, maybe, and he launches out and starts his well. Of course in drilling that well he will have opportunity may be to sell some of his acreage to others who think there is going to be oil discovered there and he would like to have a piece of acreage in the field, and he drills his well and pays for it, frequently without any cost to him whatsoever. That is a common practice in the oil industry and it is going on every day, all over.

So this business of the little fellow, Senator, if I may go back to it just a little bit, gets back in the final analysis to how much ability he has got, how hard he is willing to work and how good a salesman he is in getting somebody else to pay part of his bill.

The CHAIRMAN. And your testimony is that the door is as wide open to the little fellow today in the petroleum industry as ever, in the search for oil.

Mr. FARISH. I think so. I honestly think that is the truth, sir.²⁸

²⁷ Temporary National Economic Committee Hearings, pt. 17, pp. 9687-9688.

²⁸ Ibid., pp. 9688-9689.

On the whole, Mr. Cook's chapter on crude oil production gives an inaccurate picture of the position of the independent producer. None of his principal contentions are borne out by testimony presented before the T. N. E. C. Mr. Cook's discussion of proration amounts to a rejection of all conservation efforts. In his eagerness to prove that the majors are oppressing the independents or nonintegrated operators he protests that proration is not true conservation and that anyhow there is no need to regulate production, because there is no danger of exhaustion of crude supplies and because, even if they were exhausted, practically inexhaustible resources still remain in shales, coal, and other substitutes. In thus taking up the cause of those who oppose all conservation efforts, he places himself in direct opposition to the whole policy which the National Government, and the governments of the oil-producing States have adopted after many years of consideration and experience. The Interstate Oil Compact was first approved by Congress in 1935, for an experimental period of 2 years; it was renewed by Congress in 1937 for 2 years more; and renewed again by Congress in 1939. Likewise the Connally hot oil law was first enacted for a limited period, and then reenacted. These measures have been considered in the utmost detail both at Washington and in the compacting States. They have been accepted by all except an unimportant minority as a great forward step.

COMMENTS ON MR. COOK'S CHAPTER ON CRUDE OIL TRANSPORTATION

The principal contentions of Mr. Cook regarding crude oil transportation are: (1) The control of crude pipe lines at present is "in many respects similar to that found to exist by the Commission in 1906." (2) Interstate pipe lines, though legally common carriers, in effect are not common carriers because of restrictions as to their use. (3) Pipe line ownership is to the advantage of majors at the expense of independents. (4) Through ownership of pipe lines, majors control crude prices. (5) The use of tankers is not open to the independent refiner as he must have excessive storage facilities. These contentions will be discussed in the order presented above, after a brief description of petroleum transportation which was given by Mr. Fayette B. Dow in the introduction to his statement to the T. N. E. C.:

Petroleum is unique in that it employs in large volume all of the important facilities of transportation—railroads, ships, pipe lines, and trucks.

Petroleum, except for such byproducts as greases, wax, and asphalt, is liquid in form and it therefore adapts itself to any agency capable of moving a liquid from one place to another. It can be loaded into a container and carried on wheels or in a water-borne vessel, or it can be pumped through pipes. Whatever the vehicle—tank car, ship, pipe line or tank truck—the loading and unloading are done by pumping, a fact which greatly reduces transportation costs because the process is mechanical, rapid, and continuous until completion. It greatly reduces the idle time of the vehicle. The tank car or tank truck is loaded or unloaded in a few minutes, the tank ship in a few hours. They are then ready for the next trip. Thus petroleum, whether as crude oil on its way to the manufacturing plant or as gasoline from the plant into the avenues of distribution, is virtually in continuous movement and has attained the economies of that continuity. The pipe line movement is in fact continuous.

It may be said also that modern petroleum transportation is unique in that it has not been furnished primarily by outside agencies whose business is transportation itself. Had the industry waited for professional transporters to solve its transportation problems, to invent, devise, create the improvements needed to meet rapidly changing demands of a rapidly growing industry, it is clear that the present efficiency would not have been attained. Anyone who studies oil industry transportation finds as the first outstanding fact that the industry, from the very beginning, has created and supplied a very large part of its own transportation. He finds also that the transportation so provided has been remarkably efficient, both in service and economy, and that it has contributed a substantial part toward the progressively lower prices at which petroleum products have been made available to the public.¹

CRUDE OIL PIPE LINES

Much of the material referred to by Mr. Cook as evidence of control of pipe lines by the majors was published 25 to 35 years ago. Reference is made to investigations of the oil industry by the Interstate Commerce Commission in 1907 before the dissolution decree, which separated the old Standard Oil Co. into many companies. The reader might get the impression that the conditions referred to still exist.

¹ Temporary National Economic Committee Hearings, pt. 15, p. 8584.

On one occasion, Mr. Cook states, "The system as it exists today is a virtual monopoly of the majors." A reference is attached to this assertion indicating that it was drawn from an investigation made by the Bureau of Corporations in 1904. Obviously, evidence of 37 years ago cannot be used to support allegations of monopoly today.

The only current evidence submitted by Mr. Cook to indicate control of pipe lines by majors consists of figures of the I. C. C. showing the number of miles operated by majors in relation to the total. These figures showed that 14 major companies reporting to the I. C. C. had 89 percent of the total trunk line mileage. While this is a substantial percentage, it by no means shows that conditions are similar to those found to exist in 1906, when one company completely dominated pipe line operations. Control of pipe lines today is certainly not comparable with the period prior to the dissolution decree. Today many companies operate pipe lines; and, as shown by the map, chart XIV in the appendix to the monograph,² many of these lines are parallel and compete with each other. The testimony of Mr. Walsh, an independent refiner, confirms this statement. He said that his refinery was connected to the pipe lines of three major companies.³

COMMON CARRIER STATUS

In Mr. Cook's opinion, pipe lines "are common carriers in name only and not in fact." His chief argument here is that they are operated solely for the benefit of the majors and that independents are unable to use them because the minimum tender requirements are excessive. Most of the discussion presented deals with conditions in the industry 10 to 30 years ago as did his presentation of the extent of the majors' control of pipe lines. As for the present minimum tender requirement, he states that an examination of tariffs on file with the I. C. C. today reveals that the typical minimum tender on crude oil is 50,000 barrels. This conclusion does not correspond to facts concerning minimum tender requirements of pipe lines in Texas given in testimony before the T. N. E. C. by Mr. W. S. Farish, and supported by testimony of Mr. Fayette B. Dow.⁴ Mr. Farish's comments were as follows:

MR. FARISH. The general system of any industry, of any producer, who wants to move his oil through a pipe line to somebody else rather than the owner of the pipe line, is to ask the pipe-line company to connect up to his lease and run his oil, which they do, 100 barrels a day or 500 barrels a day, whatever the amount is, and deliver it in certain quantities at the end of the line, subject to the rules and regulations of the system, which are under supervision by the State authorities and by the I. C. C. That oil is gathered and accumulated and delivered as he orders it.

THE CHAIRMAN. Then you are telling me and the committee that various statements which are made to this committee, some of them formally and some of them informally, that the pipe lines are not actually in practice operated as common carriers, are without foundation?

MR. FARISH. To anyone who wants to use them; yes, sir, I make that statement.

THE CHAIRMAN. That the pipe lines as far as your experience goes are free and open common carriers operated without restraint upon any person who offers?

MR. FARISH. That is true; I think it is true in law and I think it is true in practice.⁵

² See TNEC Monograph No. 39, chart XIV, facing p. 8.

³ Temporary National Economic Committee Hearings, pt. 14, p. 7337. This testimony is quoted later on p. 33.

⁴ Summaries to tables, exhibit 1192, Temporary National Economic Committee Hearings, pt. 15, pp. 8617 and 8618.

⁵ Ibid., pt. 17, p. 9705.

Mr. Farish also said:

* * * In the State of Texas, since, I think, the year 1914 or 1915, I have forgotten which, we have a minimum tender of 500 barrels a day, and they take less. I know this is a fact because in 1915, operating this same little plant I described to Mr. Sumners awhile ago, when my well went dry I had some production in north Texas and I got the Texas Co. to deliver me my production in north Texas at Humble to keep this little plant running, and I had about 300 barrels a day production up there. I ran the oil, put it in a tank, pumped it over, and they got a tankful and kept going. I want to register very definitely on this charge that there is a restricted use of pipe lines; there is absolutely nothing in it.⁶

Our own examination of the interstate pipe-line tariffs on file with the I. C. C. today gives different results from those of Mr. Cook. The following table gives the results of our own study of the official file of minimum tender requirements of 48 interstate crude oil pipe line companies:

Minimum tender requirement in barrels:	Number of pipe-line companies
None.....	3
500.....	1
1,000.....	1
10,000.....	18
25,000.....	10
50,000.....	2
75,000.....	2
100,000.....	9
10,000 to 75,000.....	1
Variable.....	1
Total.....	48

These figures cannot support the statement that "the typical minimum tender on crude oil is 50,000 barrels" The most common requirement is 10,000 barrels and is used by over one-third of the 48 pipe-line companies. Furthermore, some pipe-line companies will store free of charge the daily output of a shipper until the amount accumulated is equal to the tender requirement. Free storage is provided by some pipe-line companies for as long as 59 days.⁷

Minimum tender requirements are regulated by the I. C. C., and any shipper may complain to the Commission if he believes requirements to be unreasonable. In his testimony, Mr. Fayette B. Dow, an attorney of Washington, D. C., who is chairman of the American Petroleum Institute committees on railroad transportation, on pipe-line accounting regulations, and on pipeline valuation, and who represents various oil and other interests in Washington, could remember only one case where a complaint was made by a shipper about minimum tender requirements of crude oil pipe lines.⁸

Regarding the common carrier status of pipe lines, it should be remembered that pipe lines are regulated and the producers are thus protected against exorbitant rates. The tender requirements are also regulated so that the crude producer can ship if he wants to. The important question to raise is why he does not exercise his right to use the common carrier. As was pointed out in the preceding chapter, his right to use the pipe line assures him that the crude oil prices at the two ends of the line differ only by the transportation charges, and these parity prices commonly lead him to take the more convenient course of selling his crude in the field.

⁶ Ibid., p. 9704.

⁷ Testimony of Mr. Dow, *ibid.*, pt. 15, p. 8298.

⁸ Ibid., p. 8301.

Mr. Cook also failed to mention why a minimum tender is required, thus possibly leaving the impression that it is merely a device used by the majors to force independents to sell at the well head. The reason is simple. There are many types of crude oil which have different properties. When different crudes travel through a pipe line at the same time there will be contamination or mixing at points where they are in contact. Obviously, the smaller the quantities shipped, the greater the contamination per barrel of oil. Therefore, minimum quantities are set to avoid excessive mixing of the crudes.⁹

Mr. Cook admits that the independents do not complain about current tender requirements and present-day pipe-line rates. He explains this by asserting that complaints cost too much; he says that it is "very costly for the independents to bring cases before the Interstate Commerce Commission." In the first place, complaints to the State and Federal administrative bodies are not difficult. Colonel Thompson, speaking of the practice of the Texas commission, insisted that complaints could be made cheaply and easily;¹⁰ and Mr. Dow stated that the proceedings before the Interstate Commerce Commission were not expensive.¹¹ In the second place, the public press and the hearings of the frequent governmental investigations of the oil industry give ample opportunity for voicing complaints. Mr. Cook cannot explain away the absence of complaints, which is the strongest possible evidence against his claim that the current pipe-line situation is essentially the same as that of 30 or 40 years ago.

CRUDE OIL PIPE LINES AND THE INDEPENDENTS

The general inference intended by Mr. Cook in this chapter is that, because of pipe-line control, major companies have the advantage over independents. A particular inference is that major companies are able to locate refineries near markets because their pipe lines assure an adequate supply of crude at all times. One might gain the impression from this discussion that an independent could not locate where he wanted to and be assured of an adequate supply of crude so long as he had to make use of the majors' pipe lines. In this connection, the testimony of Mr. Louis J. Walsh, an independent refiner from Houston, Tex., is of interest.

Mr. WALSH. * * * Our position as an independent refiner in the Gulf coast is this: We own no pipe lines, we have no production. We are connected to the pipe lines of three of the major companies. We have available to us crude from practically every field in Texas.

Mr. HENDERSON. You don't have any trouble getting crude?

Mr. WALSH. None whatever.

Mr. HENDERSON. At your Houston refinery?

Mr. WALSH. None whatever.

Mr. HENDERSON. Do you have any trouble with these three major companies with their pipe lines?

Mr. WALSH. None whatever. We have available crude from practically all the fields in Texas, New Mexico, and some fields in Louisiana.¹²

It should also be pointed out that many independent refineries own and operate their own pipe-line facilities. In his testimony before the

⁹ It should also be pointed out that diffusion of gasoline is greater than the diffusion of crudes, a fact which accounts for the larger minimum tender requirements of gasoline pipe lines. It is also more important to prevent diffusion in the case of gasoline because it is a refined product, the differing characteristics of which have been used as a basis of advertising to obtain consumer patronage.

¹⁰ Temporary National Economic Committee Hearings, pt. 15, p. 8248.

¹¹ Ibid., pp. 8233-8234.

¹² Ibid., pt. 14, p. 7337.

T. N. E. C., Mr. Fayette B. Dow presented statistics showing that of 31 independent refineries in the Wichita Falls, Tex., area, 19 refineries owned and operated their own pipe-line facilities and 9 were connected with pipe lines of major companies. A similar analysis of 18 independent refineries in the Corpus Christi, Tex., area showed that 8 used their own pipe-line facilities while 7 were connected with pipe lines of major companies.¹³

Mr. Cook's principal objection to the ownership of pipe lines by the majors is that pipe-line rates are too high and that the earnings of pipe line companies are excessive. He indicates that the rate of return was 26.7 percent of the investment in 1938 based upon compilations from I. C. C. figures. It should be pointed out, however, that this percentage was derived by dividing the earnings by the book or depreciated value of the plant investment, a method which will give a substantially higher figure than if the capital investment accepted by the I. C. C. for rate making is used as the divisor. Mr. Farish's testimony on this point was as follows:¹⁴

In regard to pipe-line earnings, one further point should be made. Earnings are not in fact so high as they were made to appear by the method used by the Department of Justice. It appears from table 22 in "Exhibit No. 1139"¹⁵ that the Department of Justice calculated a percentage rate of return which used "net investment" as the base. This term "net investment" was defined as "the investment in carrier property after depreciation". This basis unfairly excludes some of the assets of the pipe-line companies; the total current assets, for example, are omitted, although they are surely part of the business. How may a pipe-line company get along without operating oil stock necessary for operation, warehouse material and supplies, and a working cash balance, just to cite some major items?

Mr. Farish also stated that the pipe line companies of his organization were not earning over 8 to 9 percent on the pipe line investment.¹⁶ Mr. Cook neglected to say that pipe line rates have been reduced considerably in recent years. Mr. Farish commented as follows on this point:

The continued reduction in pipe line rates during the last 8 years has been brought about by three principal causes. In the first place, proration, by extending the life of oil fields, has also extended the life of the pipe lines to those fields. The capacity of some pipe lines is not taxed. In the second place, a number of new sources of crude oil have been discovered. The most influential discovery was in East Texas, which because of its location within a comparatively short distance of Gulf coast refineries, enabled the refiners there to secure crude oil supplies at low pipe line cost. The first indication of the importance of this East Texas competition was given in an announcement on April 21, 1931, by the Humble Pipe Line Co., of an average reduction of pipe line rates affecting its entire system. * * * Since that date there has been continuous pressure on pipe line rates in Texas, and several reductions in pipe line rates have taken place. East Texas best illustrates the significance of new sources of oil supply because it was the most important. It does not, however, stand alone, for other new discoveries have had a similar impact.

The third cause of the reductions in pipe line rates has been the development of other means of transportation of crude petroleum and its products. These have directly or indirectly affected the demand for the services of the pipe lines. Both ocean and river transportation have greatly increased in importance. They may reduce the barrels of oil carried by the pipe line systems. Pressure from regulatory authorities was of relatively little importance, although the investigations and orders of the Interstate Commerce Commission of recent years have doubtless been of some weight in rate reductions.

¹³ Ibid., pt. 15, exhibit 1192, pp. 8616-8618.

¹⁴ Ibid., pt. 17, p. 9759.

¹⁵ Ibid., pt. 14-A, p. 7796.

¹⁶ Ibid., pt. 17, p. 9756.

Successive reductions in rates have brought the present earnings of pipe lines down to a point where the return may well be inadequate in some instances. The risk in pipe lines has by no means disappeared. Oil fields become exhausted and demands shift.¹⁷

The summary statistics of pipe line companies reporting to the Interstate Commerce Commission, for the years 1929 through 1937, show the lowering of the return on investment as a result of the reductions of pipe line rates and show also that the rate of return is not really so high as Mr. Cook made it appear by leaving out part of the investment.¹⁸

Mr. Cook also states that the independent operator is at a disadvantage because he must pay the published tariff for pipe line transportation whereas a major company owning the facility ultimately pays only the cost of operation. Surely, Mr. Cook does not expect rates to be sufficient only to cover costs. He would certainly concede that the owner of the facility should receive some return on his investment. There are risks involved in any capital investment, particularly a pipe line investment, because the development of new producing areas may reduce the amount of crude taken from existing fields serving those areas. The development of Illinois production serves as a recent example of this. Additional crude oil produced in Illinois displaced crude produced in Oklahoma and Kansas which was moved through pipe lines to refineries serving the North Central States. The volume of these pipe lines was seriously reduced, as indicated by Mr. Farish in his testimony regarding the Ajax Pipeline Co.¹⁹ In some cases also pipe lines are actually removed because new fields do not produce as much crude as was expected when the lines were constructed. This point was brought out by Mr. Fayette B. Dow in his testimony regarding pipe lines in north Texas fields.²⁰

PIPE LINES AND CRUDE OIL PRICES

In his treatment of crude oil transportation, Mr. Cook included a discussion of the purchases of crude by the majors who own the pipe lines. He states that the presence of uniform prices in a given field suggests "an agreement to work together to control crude prices," and that posted prices of all majors in a given field change at the same time.

In our discussion of his chapter on production, it was pointed out that uniform prices are proof neither of monopoly nor of competition but that uniformity can exist under either set of circumstances. Different prices to different producers, in other words discriminatory prices, would suggest monopoly. Therefore, uniform prices do not suggest "an agreement to work together to control crude prices" any more than they suggest that competition is keen. Mr. Cook made no attempt to describe the influences affecting the price of crude in a given field, nor did he attempt to show how prices are established. To facilitate an understanding of this subject by the reader, some attention will now be given to the crude oil market and the determination of crude oil prices.

¹⁷ Ibid., pp. 9942-9943.

¹⁸ Ibid., pt. 14-A, table 17c, p. 7792. The table is reproduced in the appendix of this reply as table 2, p. 70 *infra*.

¹⁹ Ibid., pt. 17, p. 9731.

²⁰ Ibid., pt. 15, p. 8302.

The following characteristics of the product and its buyers and sellers need to be borne in mind:

Crude oil is of many different qualities. Crudes differ as to the type and amount of impurities which they contain, as to the yield of gasoline and other products which can be secured, and in many other ways. Similarly, crude is found in many different locations, some near refineries, some distant from refineries. These differences among crudes affect importantly the value of the crudes to buyers.

The buyers of crude oil include both large and small concerns, but large enterprises predominate. The sellers of crude oil also include both large and small concerns, but the small enterprises are somewhat more prominent on the selling side than on the buying side.

Many buyers of crude oil are also producers from their own wells. This is true of both large concerns and small concerns. Most large concerns are net buyers of crude: That is, they do not produce all that they use in their refineries. Even the large companies which are net sellers of crude buy substantial quantities, either because they require particular grades which they do not themselves produce or because they need oil at particular locations where they do not have production.

Crude oil is commonly purchased at the point of production; field storage is ordinarily reduced to a minimum. Sellers of crude normally make constant and continuous deliveries to buyers.

POSTED PRICES AND PRICE LEADERSHIP

Over a period of years a posted price system has developed for the purchase of crude oil. This system, which superseded purchase by long-term contracts, was described by Mr. Farish in these words:

* * * The posted price system needs a careful explanation, because it is a system which well suits the peculiar economic and technical needs of the oil industry but is not a system of price protection that is suited to the needs of other industries. The entire industry would oppose any tampering with the system, however much dissatisfaction there may be with the prices themselves.

Crude prices are posted by the purchasing interests in the oil fields. Sometimes the price is posted by only one purchaser, and the others either buy at that price or offer premiums or discounts based on it. In larger fields, the prices are posted by several purchasers.

The posted price system has three functions. It serves to tell the producer the price at which the company will take the oil. It serves as a basis for settling with royalty interests, who are also sellers of oil. The royalty interest in a single well may be divided between many individuals. The posted price system also serves to tell purchasers of oil from an oil merchant (who has bought crude from a producer) the terms on which the merchant will sell. A large oil company has to make thousands of settlements, and some common basis for them all is needed for both equity and economy. The same basis, the posted price, is used for settlements with both large and small sellers and purchasers.

The posted price system of quoting prices has no necessary connection with either monopoly or competition. If either the buying or the selling of the crude oil produced in the fields were concentrated in a single hand, the monopolist might post a price. He might also make contracts for long term deliveries. A monopolist might post the same price for all or he might discriminate among his sellers or customers. The system of quoting posted prices in the oil fields may have some slight effect on crude prices, because almost everything that happens in the industry and even outside the industry may have some effect on crude prices. But if the posted system is not necessarily connected with either monopoly or competition, the peculiarities of this method can best be understood by studying the system as it exists—under competition. Under the posted price system the purchaser ordinarily stands ready to take all the production which a producer may legally obtain. Usually a large purchaser does not find such rapid changes in his requirements

that he has to make short term increases or decreases in his takings. He sometimes has to do so, and always reserves his right to do so.

The emphasis placed upon the fact that in some fields there is only one or only a few purchasers is entirely unwarranted. The fact is, of course, true, but it has little or no economic significance. All of the oil wells of the United States are really a part of a common market, and the United States market is only a part of a world market. In the whole market there are many buyers and many sellers. In the testimony before the T. N. E. C. there is abundant evidence that there are many economic interconnections between the various petroleum markets. In effect, then, the posted price system brings the world market to the door of the smallest well.

Of course, the various parts of the world market are not always in precise alignment. The very effects of the slight inequalities between markets are part of the process by which those inequalities are constantly tending to disappear.²¹

There is no evidence in the T. N. E. C. testimony of collusive agreements among either buyers or sellers of crude in regard to prices. Mr. Farish denied flatly that such collusive agreements exist, and this testimony was confirmed by Mr. Shatford with the emphatic statement, "the problem is not one of conspiracy and collusion."²²

In discussing price leadership in his formal statement, Mr. Farish said:

Suspicion about conspiracies to control prices also arises from misunderstanding the significance of so-called price leadership. The power of the so-called price leader is greatly overestimated. This exaggerated picture develops because the general public, and even men in the industry, get in the habit of looking only at the changes in the posted published prices. These are the conspicuous changes, but they merely follow unpublicized changes in the prices actually paid, or other developments which clearly foreshadow a market trend.

When the crude market tends to be weak, unpublicized discounts from the posted price appear; that is, some sellers offer oil to some buyers at prices below the posted figure. If these discounts are small and scattered, little attention is paid to them. But when they spread so that a substantial quantity of crude is moving below the prevailing market price, some one company, usually but not always the largest buyer in the territory, finally accepts the responsibility of recognizing formally the change that has taken place. Essentially, then, this so-called price leader merely takes the lead in announcing a change in market price—that has, to all intents and purposes, already occurred.

In the opposite situation, when the market is tending to be strong, there have been times when premiums over the posted price were paid. Premiums today are infrequent, but there are many other indications when the market is strengthening, such as sales running far beyond estimates, high market prices for finished products, short inventory positions, activity of crude buyers in closing contracts and making connections, disappearance of any substantial volume of crude moving under the posted market, and, particularly, a strong attitude of the regulatory authorities toward maintaining firm allowables and not granting special favors to producers. Perhaps the most important evidence of all is an advancing cost of getting the oil from underground. When an individual company, usually one that is a large buyer of crude, interprets these various signs as indicating that basic conditions are tending to require a higher price, it takes the step of formally recognizing the changed market situation by means of an advance in the posted price.

Thus the so-called price leader is merely the interpreter of market conditions. He is by no means a necessarily infallible interpreter, and if he guesses wrong, he finds himself out on a limb. The price leader is not always the biggest buyer, and it is not always the same company which takes the initial action in each instance. In general, changes in the posted prices of crude lag behind changes in gasoline prices. There is no formula for determining the one right ratio of crude prices to gasoline prices and no formula for determining the one right lag of posted crude prices behind product prices. The existence of the lag is inevitable because the price leader is really the price follower. He announces the changes which have taken place. Somebody always criticizes any price change; that is only natural, and that is why the situation of the so-called price leader is not a

²¹ Temporary National Economic Committee Hearings, pt. 17, pp. 9943-9941.

²² *Ibid.*, pt. 16, p. 7.

happy one. But there is much more criticism of price decreases than of price increases. As Mr. DeGolyer remarked, it is practically an article of faith with producers that crude oil is worth more than they get for it. The company which takes the lead in posting a price cut is distinctly unpopular. After all, the sellers are in close contact with the buying company; they are the people that the company has to live with from day to day. Hence the posted price of crude shows less responsiveness to market changes which point toward a lower price than it does to market changes which point toward a higher price. In other words, the downward price changes tend to be delayed; and it is an elementary fact that after the market situation has become clear any delay in a price change increases the size of the eventual adjustment.²³

TANKERS

Mr. Cook was concerned about the control of tankers by the major companies. Some space was used to describe a plan for pooling of tankers by major companies which was commented upon by Mr. Louis J. Walsh in his testimony before the T. N. E. C. The condensation of Mr. Walsh's testimony was reasonably accurate except that Mr. Cook omitted Mr. Walsh's important statement that the plan was never put into effect.²⁴

Another complaint concerning ownership of tankers by majors is that, "similar problems to pipe lines are encountered by independents in that it is necessary to build excessive storage facilities so as to store enough crude oil or gasoline to make a shipment." The word "excessive" is improperly used in this connection. So long as transportation by tanker is cheaper than any other form (and it is admitted to be cheaper by Mr. Cook), the storage necessary to take advantage of water transportation is not "excessive." Independents do not have to own tankers, as they may either charter them to move their products or crude, or sell products to others for loading at the Gulf. In any case, an independent refiner selling products to majors or to others requiring movement in tankers does not necessarily have to provide enough storage to load a large tanker. He may provide enough storage to load one compartment in a large tanker or he may use a small tanker. At some points, he may find storage facilities not owned by any other refiner available for hire. There is no evidence in the T. N. E. C. record to support the claim that the independent refiners are handicapped by having to provide excessive storage.

In the foregoing pages, the principal contentions of Mr. Cook regarding crude transportation have been stated and discussed. It has been shown that much of his argument was based upon statements made many years ago and that other generalizations are refuted by the statements of witnesses before the T. N. E. C. The general implication that independent refiners and producers are being abused because of ownership of crude transportation facilities by major companies is not substantiated.

In no part of his monograph has Mr. Cook failed more conspicuously to present an accurate picture of current conditions of the oil industry than in his discussion of crude oil pipe lines. There is now competition among pipe lines. Thanks to the protection of equitable taking laws and of regulated tenders and rates and thanks to the posted price system, the independent oil producers now have effective access to the world market.

²³ Ibid., pt. 17, p. 9945.

²⁴ Ibid., pt. 14, p. 7335.

COMMENTS ON MR. COOK'S CHAPTER ON REFINING

Mr. Cook's chief contentions regarding refining activities are: (1) Major companies have advantages of mass production and of location in refinery centers, whereas "independent refiners are usually located in or near the oil field because of transportation disadvantages, and their market is limited." (2) Major companies "can buy oil from many sources and the effects of proration are not the same as to the independents, who could not buy or produce enough of their own oil under the laws to keep their refineries going." (3) Majors "applied what is known as the refinery 'price squeeze' " in order to control or eliminate independents. (4) Majors have control of patents, and this control constitutes one of their "strongest weapons," since the independents must pay "substantial," "high," and "considerable" royalties for the use of these patents. Independents are harassed by majors for alleged infringements, and they cannot afford to defend themselves in litigation. (5) Exchanges of gasoline by majors lessen competition.

MAJOR COMPANIES VERSUS INDEPENDENTS

Independent refiners do have the opportunity to locate at the seaboard or consuming centers. It is true that many independent refineries are located in or near oil fields; some small refineries owned by majors are also located there. It is also true, as pointed out by Mr. Cook, that there are 16 independent refiners located on the Gulf coast. One of these, Mr. Walsh, testified as follows before the T. N. E. C. regarding refinery location:

* * * We checked the whole situation over and decided that we would build our refinery at Houston. We chose Houston because Houston was at that time, and still is, the greatest single refining center in the world, both from the number of refiners and the barrels of crude handled every day. Houston is also an excellent refiner center because of its transportation facilities. From Houston you can compete with world markets any place.

In 1935 we went ahead and spent about eight or nine hundred thousand dollars and built our refinery at Houston. We built the best plant we could build. It was modern, as up to date as anything we knew of at that time. Our plant there has a capacity of 15,000 barrels per day, of which 10,000 barrels is cracking capacity, the remaining 5 being topping capacity.¹

This testimony is also of interest because it shows that an independent refiner can have as much cracking capacity as he wants. Mr. Walsh also stated that he had no trouble in obtaining crude supplies.²

Mr. Cook produced no evidence to support his general inference that the independent was being forced out of business by the majors. His discussion consisted mainly of the presentation of some figures

¹ Temporary National Economic Committee hearings, pt. 14, p. 7336.

² Ibid., p. 7337. This statement is reproduced in the discussion of crude oil transportation, p. 33, supra.

showing the size of majors as compared with independents, the mortality of independent refiners in East Texas, and the percentage of capacity operated by independents as compared with majors. One might conclude from Mr. Cook's picture of East Texas that independents never made any money and that their activities were on the wane. As to the first point, it should be noted that abandonment of a refinery in itself does not prove the refinery was unprofitable. Many independent refineries made money even though they were short-lived. Regarding the point that independent refineries are decreasing, the facts indicate quite the opposite. Dr. R. E. Wilson, president of Pan American Petroleum & Transport Co., testified as follows concerning the growth of independent refineries:

May I add that to go to the other end of the picture and give the small refinery picture in Texas, I have taken independent refineries, that is, companies that are not in the first 20, operating in Texas, by years, under 10,000 barrels a day; there were 44 in '29, 56 in '31, 71 in '33, 79 in '35, which is about the height of the East Texas small refinery, and 74 in '38. In other words, while there have been many refineries shut down in East Texas, there have been enough more built in other points during that period, and incidentally during the period of proration, to keep the total very close. That applies only to the refineries below 10,000 barrels a day. There are a number of independent refineries, above 10,000 barrels a day, and those are the companies which you might say are growing and getting into the semimajor field. In 1929, 2; '31, still 2; '33 there were 5; '35 there were 5; in 1938 there were 7. In other words, quite a number of these companies which started small are growing. This refinery that I mentioned in northern Kansas which was shipping so much by truck I think has twice doubled the size of that refinery; I believe it started out 4,000, they raised it to 8, and then they raised it to about 15, and they are still going. Again and again if you get a favorably located, well-managed company, it is able to go ahead, but not every company that enters can go ahead.³

The above testimony is quite the opposite of the picture painted by Mr. Cook and indicates that something must be wrong with the statistics presented by him in his table 10 on page 33, which present a comparison of the capacity of majors and independents over a period of years. Careful study of the text immediately preceding the table shows definitely that something is wrong with it. The two sets of facts, one concerning majors and the other having to do with independents, are not comparable statistically. The capacity figures for the majors include refineries in "territory where the supply of crude from the East Texas field was available." This is an ambiguous statement, but presumably the area includes the Texas Gulf, part of all of the interior of Louisiana and Arkansas, and East Texas, because the figures are somewhat greater than he formerly attributed to majors on the Gulf Coast. Capacity figures for independents, on the other hand, include only those in East Texas. The only comparison worth anything statistically would be one comparing independents and majors in the same area. Were this done, the independents on the Gulf coast and other parts of the territory would be included, and the answer would be similar to that given by Dr. Wilson.

Dr. Wilson also described the conditions in a wide-open field such as East Texas which lead to the construction of more refineries than can economically exist. Excerpts from his testimony follow:

The remaining point I wish to cover was the situation with regard to the East Texas refiners, of which a considerable number have, as you know, gone out of business in recent years. Does that mean that the way is no longer open for the small man to get started and make a profitable entry into business, or just what does it mean? To understand that situation I think it is necessary to picture the

³ Ibid., pt. 15, p. 8377.

conditions in an oil field that comes in when there is a diversity of ownership and no effective proration. That is, a large, flush field of the type we have had quite a number of in the past. The wells, in general, start coming in faster than pipe lines can be built to take care of the oil. That means that everyone is scrambling for an outlet. He is willing in order to give an outlet to sacrifice the prices of his crude because he realizes that every barrel he can get out of his property before the other man, his neighbor, can get it out is velvet, so to speak. That is, it really costs him nothing because if he doesn't get it then his neighbor will get it at some later time, and therefore there is a tremendous scramble to get oil to market at any price, practically.

* * * * *

* * * Now when you have this situation of overproduction, some producers having difficulty in getting rid of their crude say, "Let's build a refinery and sell the product." They realize that in that immediate locality there is demand for gasoline, and if they can build the first refinery or second refinery they can save the freight two ways, because up until then the crude has been going to a refining area and has been refined and shipped back as gasoline. They build a small refinery, generally first only a skimming plant. The minute they do that, the other producers realize that man is getting more than his fair share of the crude and they think the only thing to do is to build a refinery, so in almost any field you get a number of refineries of that size built rather promptly, and of that general characteristic. As soon as you get four or five you begin to have so much competition that they can't sell their products in that local area. They must sell farther and farther afield.

A refinery located in an oil field is advantageously located so far as a limited market in that vicinity is concerned, but it is poorly located if it has to go far afield to sell its gasoline, especially if it makes a low yield of gasoline and has a lot of fuel oil to sell, because fuel oil is generally pretty much of a drug on a market in an oil field, because there is always gas available for ordinary fuel requirement.

* * * * *

And so when the crude, when the price of crude, gets up to a normal figure, these refineries just can't compete. They are built to operate on very cheap crude. They have in the value of their products a disability against them of something like 20 cents a barrel. That is the difference between the value of the barrel of products made with cracking and the value of a barrel of products made by a simple skimming plant. The quality is poor, not competitive, in general, with the demands of the modern motorcar.⁴

REFINERY CRUDE SUPPLY

Mr. Cook's complaint that proration prevents the independent refiner but not the major company from buying or producing enough oil to run his refinery is really an argument against proration. It has already been shown that if there is any discrimination in the administration of proration laws it is in favor of the independent, who is given proportionately greater allowables. Therefore, Mr. Cook must be complaining about proration in general. The conservation aspects and benefits of proration have already been presented and need not be reiterated. It is necessary, however, to point out again that the reason a refiner is not allowed to take as much oil as he wants to is because he is prevented from doing so by ratable taking laws which are designed to provide equitable distribution of the total purchases of oil among the various producers in a field. No one refiner, whether independent or major, should be allowed to take oil from his own wells at the expense of other producers, and he is not allowed to do so.

Mr. Cook's figures on percentages of capacity operated by majors and independents are interesting because they show that majors operate at a higher rate. Apparently these facts are designed to show how the majors have the advantage over independents. They serve to

⁴ Temporary National Economic Committee Hearings, pt. 15, pp. 8338; 8339-8340.

remind one, however, of Mr. Cook's complaint that, because the major's percentage of reserves is greater than their percentage of production, they are deliberately holding back production. Mr. Cook complains both because the majors produce at a low rate and because they refine at a high rate.

"PRICE SQUEEZE"

Mr. Cook had something to say about the refinery "price squeeze," stating that it was applied by the majors "in order to control or eliminate these independents." Refinery price squeeze is the term he used to describe a situation where product prices are low relative to crude prices and where the refiner has a smaller margin to cover his costs. Such a condition can and does exist from time to time either because product prices are abnormally low or crude prices are abnormally high. The reverse situation, where crude prices are low in relation to product prices, has also existed. It is during such periods that most independent refineries are constructed, because refinery margins are more than adequate to cover costs.

For the charge to be true that the majors are responsible for the so-called refinery price squeeze, majors as a group must be guilty either of forcing crude prices up or forcing product prices down. Examination of the T. N. E. C. testimony reveals no proof that there are any collusive agreements among refiners to bring about either artificially high prices for crude or artificially low prices for products, nor is there any evidence of agreement regarding the amount of refinery runs or the size of inventories to be carried. Furthermore, there is no evidence that price reductions apparently caused by excursion of small refiners into new markets are deliberate. Undoubtedly, the small refiner entered the new market, in part at least, on the basis of price reductions; and what he objects to is the fact that the major companies meet the price reductions when their volume is sufficiently affected to make it worth while to reduce prices to regain volume.

There is considerable price competition in the marketing of petroleum products, and this competition undoubtedly exerts pressure upon the margins of refiners generally and also upon crude prices. The small producing interests assert that the price of crude is reduced as a result of excessive product inventories, whereas the small refining interests maintain that crude prices do not respond to the pressure of such inventories promptly or adequately. Both sides cannot be right.

PATENTS

Mr. Cook's contentions concerning the control and use of patents are not well founded. He claims that patents are used to "harass independent refiners for alleged infringement of patents" and that royalties paid to majors for use of patents are "high," "substantial," and "considerable." There is no evidence whatever in the T. N. E. C. testimony that patents are used by majors to harass the independents; there were no complaints about either the availability of patents or royalties for their use; and Mr. Cook offers neither proof nor authority for his statements. On the contrary, the testimony indicates that ownership and control of patents is not a major problem in the oil business. No single patent pool exists, no closed patent pool is used,

and some trading among companies with valuable patents is characteristic of the industry. The small refiner who wishes to use several patents which are owned by a number of different companies and which are necessary to employ a particular refining process does not have to go to all the different companies for a separate license. Any one of the companies is permitted to grant a license on all the patents necessary for the process. Since one company rarely obtains all the patents that are used in one refining process, companies usually exchange rights to use patents; and as a result of these agreements the small refiner obtains convenient access to a variety of patents. As to the availability and cost of the patents, Dr. Wilson's testimony before the T. N. E. C. was as follows:

The VICE CHAIRMAN. To what degree do patents on processes of cracking oil, and so forth, controlled by some of the major companies interfere with the opportunity of the small man to go into the business?

Dr. WILSON. Practically every patent that is owned by the industry is available for license on a reasonable rate. Further than that, when I say a reasonable rate I mean a rate which is figured to be a small percentage of the savings that he can make by using that process. Furthermore, in order to simplify the matter, where patents that are owned by a number of different companies are necessary to practice a particular process that he wants to, he doesn't have to go to all those different companies to get a separate license, he can get a license to use every patent of a substantial number of companies for that particular process if he wants to do it.

The VICE CHAIRMAN. The effect of your statement, then, is that patents and the opportunity to use them doesn't interfere substantially with the opportunity of the independent man to go into business.

Dr. WILSON. That is correct.

Dr. LUBIN. Is the license fee charged to all people alike?

Dr. WILSON. Generally there is a sliding scale with the size of operation or the total amount processed. It starts out on the same basis. Of course there are special arrangements whereby some companies which have patents turn in those patents and get a credit on their royalty rate. There are a great many special deals of that sort, because there are comparatively few companies in the industry who have done research on cracking that don't have some developments that are of importance.

Dr. LUBIN. But all people, all refineries, pay exactly the same rate, and where there are differences it is based upon volume?

Dr. WILSON. No. Some refiners have free licenses because they exchange cross-licensing agreements, so different companies which have got a substantial amount of patents will get free licenses under some other companies. There is quite a bit of exchange among the industry of that character.

Dr. LUBIN. Is there a patent pool in the industry?

Dr. WILSON. No single patent pool.

Dr. LUBIN. It is just a bargaining between different companies?

Dr. WILSON. On each different type of process there are different arrangements. It is very seldom that one company gets all the patents that bear on some one process they want to operate. One man gets certain features, another man gets certain features, and they find that to operate successfully they must make an agreement. They get together and do it.

Patents have not been used to build up monopolies or to keep other people out. As I say, practically every patent in the industry is available for license.⁵

There is no evidence in the T. N. E. C. testimony regarding the profitableness of patents to companies which own them, but Mr. J. Howard Pew, president of the Sun Oil Co. ventured the following opinion:

I should point out that the cost of developing these processes is probably greater than all the royalties that have ever been obtained from them. I suggest that as something you gentlemen might look into. I don't know, but I think that is probably true.⁶

⁵ Temporary National Economic Committee Hearings, pt. 15, pp. 8328-8329.

⁶ Ibid., pt. 14, p. 8218.

Patents in the oil industry are the results of long and costly research. Such technical advances, particularly in the field of chemical engineering, require large expenditures beyond the resources of small units. By payment of royalties, however, the small companies are able to use the results of expensive research and indirectly contribute to the costs of the research sums consistent with their smaller resources.

EXCHANGES OF GASOLINE

In connection with exchanges of gasoline, Mr. Cook uses as a heading to the discussion "Lessening of Competition Through Exchanging of Gasoline." Nowhere in his discussion, however, does he explain how exchanges lessen competition. In fact, exchanges of gasoline increase rather than decrease competition. There are certain to be some areas in the marketing territory of a major company where its delivered costs are higher than at other points because of the distance from its refinery. A competing major company may have a refinery more advantageously located to serve such an area, but it may be at a similar disadvantage as to refinery location in an area of the first company's territory. By exchanging gasoline, each company is able to deliver gasoline to these particular areas more cheaply than if no exchange were made.

If exchanges were not possible, the company in a disadvantageous location would have to either withdraw from the market or build another refinery so that it could compete with the competitor more favorably situated. Either of these alternatives would be to the disadvantage of the consumer. If the company withdrew from the market, competition would be lessened, and the addition of an unnecessary refinery would be an economic waste. Perhaps the best way to counter Mr. Cook's claim is to ask what he would think of a marketing system where the majors deliberately avoided the exchanging of gasoline.

In the foregoing discussion, it has been shown through testimony of witnesses before the T. N. E. C. that the independent refiners have a place in the industry and that their numbers have increased. They are not necessarily at a disadvantage in location; they generally have readily available crude supplies; and they can obtain the right to use patented processes from a variety of sources at reasonable cost. There is, however, ample evidence of pressure on badly located or antiquated refineries. If all the badly located or antiquated refineries were able to make profits, a claim could plausibly be made that there was a conspiracy to exact monopoly profits from the consumers. Under the circumstances as they actually exist, it is to be hoped and expected that the elimination of wasteful gusher production will prevent the waste of capital involved in erecting short-lived field refineries. The majors are not responsible for the refinery-price squeeze, and, with their relatively large stake in refining, they generally suffer from maladjustments between the prices of crude and the prices of products just as much as do the independents.

COMMENTS ON MR. COOK'S CHAPTER ON MARKETING

Mr. Cook's chief complaint concerning the marketing branch of the industry is that majors control jobbers and service station operators. He also makes several general allegations which are related to his statement that "there is virtually no price competition among the majors," but most of his discussion is devoted to the alleged control over jobbers and operators of retail outlets. He gives no attention to the factors which influence prices and to the processes through which prices are established. This omission affects Mr. Cook's whole argument, because an explanation of these influences and processes would serve to nullify many of his complaints concerning jobbers and retailers. For this reason, Mr. Cook's general allegations will be discussed first.

The value of Mr. Cook's monograph is impaired by the fact that he sometimes states conclusions in his chapter summaries about subjects which are discussed nowhere in his text, and it is in the summary to this particular chapter that he says "there is virtually no price competition among the majors." Almost in the same sweep of his pen, in fact in the preceding paragraph, he also states that "the marketing division is overbuilt and the most competitive of all divisions of the petroleum industry," and that "the majors account for 85 percent of the domestic sales of gasoline." If the majors account for 85 percent of the sales of gasoline and do not compete with each other, how can the marketing division be the most competitive? Or, if the marketing division is the most competitive, how can there be "virtually no price competition among the majors"? One of these statements must be wrong, and examination of the testimony before the T. N. E. C. shows that it is erroneous to conclude that there is no competition among majors. On the contrary, the testimony leads to the conclusion that the marketing of petroleum products is so competitive that complaints from those engaged in that branch of the business are to be expected. Not everyone engaged in an extremely competitive business can prosper. Some are bound to be affected adversely by aggressive action of others in the general scramble for a share of the total business.

NATURE OF COMPETITION IN THE MARKETING BRANCH OF THE PETROLEUM INDUSTRY

In the petroleum industry, as elsewhere, the word "competition" means many things to many men. A suitable common denominator for the many forms taken by competition may be found in the phrase "a conflict for advantage." Enterprises and individuals in the marketing branch of the petroleum industry conflict with each other in lowering prices to obtain greater gallonage, in extending service to motorists, in securing choice locations for filling stations, in advertising

their products and services, and in improving the effectiveness of their salesmanship. These points of conflict are illustrative only; the list could be expanded.

The T. N. E. C. testimony showed that no company or group of companies remains aloof from conflicts for advantage and that no clear-cut lines of demarcation separate companies as to their desire to gain advantages over competitors. Division of the industry into the categories "big and little," or "integrated and nonintegrated," or "Standard Oil companies and independents," is of no use in defining the intensity of conflict. Large companies compete against each other and against nonintegrated enterprises; and the old pattern of competition, which was that between the Standard Oil Trust on the one hand and the independents on the other, has been supplanted by a new pattern of competition in which companies once parts of the old Trust are in conflict with each other and with other enterprises, both large and small.

Certain fundamental characteristics of the market for gasoline seem to have shaped the character of competition. The use of the automobile has become so much a habit of the American people that moderate price changes do not materially influence aggregate consumption. On the other hand, the volume of any single supplier is extremely sensitive to any difference in price. Because the purchaser is in a moving vehicle, there is ordinarily no inconvenience involved in traveling from a station quoting a higher price to one quoting a lower price. It is this factor which serves as an incentive for each seller to move quickly to meet a lower price of a competitor and which makes for the substantial uniformity in the quoted prices of gasoline. There are, moreover, in any territory a sufficiently small number of sellers so that each competitor can readily know what actions others take. Indeed, because of the open and public character of the transaction, it is well nigh impossible to offer lower prices without the fact becoming known to competitors.

These facts relate directly to price competition at retail, and they are paralleled in the wholesale market. Suppliers recognize that an open reduction in the tank wagon price has the effect, if the price cutter is of any importance in the market, of making necessary a similar reduction by all competitors. Recognition is general that an open price reduction is not an effective means of gaining gallonage. On the other hand, the urge for increased gallonage is very strong because of the proportion of costs which are fixed.

Special attention should be given to the place in the market occupied by the seller of unbranded or unadvertised gasoline. To obtain business such concerns must offer price concessions, particularly if they operate in locations inconvenient for most motorists. Many so-called trackside stations are of this character. In most communities a fairly well-defined differential in price exists between these concerns and the stations selling branded, advertised gasoline. If this differential increases or decreases, substantial gallonage is shifted, the amount depending upon the location of the cut-price station, the income level of the community, the public demand for car lubrication and other services in addition to gasoline supply.

PRICE LEADERS

With this background in mind, we may now proceed to an examination of the specific allegations made by Mr. Cook. Unless his words are studied carefully, one might gain the impression that the majors have divided the United States into sections and that each section is dominated by one major company, which acts as the price leader and generally controls operations with the consent of the other majors operating therein. That this may be Mr. Cook's purpose is indicated by use of such phrases as "quite similar to that set up after the 1911 decree" and "the effect of this division of territory." In fact, as already noted, many of the companies once parts of the old Standard Oil Co. have expanded their operations and are now competing with one another. At the same time Mr. Cook states that "the number of major oil companies operating in the different States ranges from 5 to 16, the model number being 11." Therefore, to be true, his implication concerning division of territories would require the cooperation of not less than 5 majors in any State and as many as 16 in some States. How as many major companies, all of them aggressively competing for gallonage, in territories where thousands of independent retailers operate, could get together so that one company would be price leader and would be able to "maintain the price structure" is very difficult to understand.

Because of the thousands of independent retailers, the price leader is not an all-powerful figure. He is under many sorts of competitive pressures, and has to adjust his prices to meet the developments in the competitive situation. He leads only in publishing price changes which market conditions have made inevitable; he is really more of a follower than a leader.

To Mr. Cook price leadership apparently means some great and perhaps even dangerous power to control the level of prices. Since price leadership is often misunderstood by the layman, and apparently sometimes by the expert, it is desirable to call attention to the best explanation of price leadership and the marketing operations of major companies in general with respect to posted prices; the best explanation on this subject was presented to the T. N. E. C. by Mr. Sidney A. Swensrud, vice president of the Standard Oil Company of Ohio. His testimony follows:

* * * Over the last 20 years the gasoline market has been a down-price market; that is, price reductions have been more frequent than price advances or they have been of longer duration or they have represented a greater change (for example, a 1-cent cut followed by a $\frac{1}{2}$ -cent advance at a later date). The reasons for this down trend will not be treated at this point in the memorandum; but there is no question of the fact. Let us look first, therefore, at how price reductions come about.

In any territory all suppliers are watching the same things. They watch the statistical position of the industry as a whole, that is, production of crude oil and gasoline, sales of petroleum products, and stocks of crude oil and gasoline. They watch these same statistics for the part of the industry which is directly serving the specific territory. They watch the ambitions of competitors to increase their share of the business in the territory. They gage these ambitions by reports of salesmen on price concessions to commercial customers, by observations of the amount of business done by trackside operators and sellers of unbranded and locally branded gasoline, by the reports of salesmen as to competitive offers being made to dealers, and by reports of salesmen as to the extent of secret price cuts, discounts, and the like being offered by retailers. All these facts are constantly before local managers and central organizations.

Now suppose that secret price cutting by dealers in some particular area breaks out into the open in the form of a cut in the posted price because some dealer becomes disgusted with the uncertainty as to how much business he is losing to competitors granting secret discounts. As the openly admitted price reduction operates, the local officers of all suppliers are assailed with demands from dealers, relayed and in some instances emphasized by salesmen, for a reduction in the tank-wagon price. The local managers of all suppliers face the problem of what to do. The local manager of the leading marketer of course faces more demands than any other manager. He attempts to gage the permanence of the retail cut. Frequently local managers elect to make no change in the tank-wagon price. Ordinarily this decision springs from the conclusion that the local price war will soon run its course because it is not supported by weakness in basic markets. On other occasions the local manager concludes that the causes of the retail price cutting rest primarily on the availability of sufficient low-price gasoline so that the condition may be considered deep-seated, and he therefore authorizes or recommends a local reduction of the tank-wagon price.

Again, a company boring into the territory may be offering unpublicized concessions to secure dealers. The company most affected by such efforts is ordinarily the company with the largest share of the business. The local manager of that company must therefore meet the situation if he is to hold his dealers. He may elect to reduce the tank-wagon price in a particular area to recognize and meet intensive unpublicized price competition. When he does so, all other companies meet the price reduction because long experience in the industry has proved that failure to do so will result in a substantial loss in business. Thus the particular local territory becomes a subnormal territory, that is, one in which prices are out of line with those generally prevailing in the marketing area.

The major sales executives of all companies watch carefully the number and size of the subnormal markets. These executives are naturally reluctant to lower prices, because profits are thereby adversely affected. The sales executives refrain from reducing prices generally as long as it is possible to do so, because they are anxious to secure as much business as possible at the higher price. But if the number of local price cuts increases, if the number and amount of secret concessions to commercial consumers increase, if the secret unpublicized concessions to dealers increase, it becomes more and more difficult to maintain the higher prices. In other words, the so-called subnormal prices are becoming the normal prices. Finally some company, usually the largest marketer in the territory, recognizes that the subnormal price has become the normal price and announces a general price reduction throughout the territory. As in the local situation, all other suppliers meet the price reduction because they know business will flow to others if they do not.

The reverse situation, the price advance, is rarer because of the many forces working to reduce prices. Price advances may be either local increases which represent a reversal of a previous price reduction or a general price advance. Local price advances come about when dealers' struggles have spent themselves. The salesmen, therefore, constantly gage the attitude of dealers. All companies serving the particular territory are anxious to raise the price in the subnormal market, but the leading marketer in the territory is naturally most anxious to get the price up because the territory is more important to him than to the other companies. But the local manager of the leading company does not know whether his competitors are ready to advance the price. He fears that they may seize upon any price advance by him as an opportunity to gain volume at his expense. He therefore asks his salesmen to gage the attitude of competitors through the reports of customers as to actions and comments of the salesmen of competitors. Finally, the local manager for the leading company decides that the decrease in the ambitions of dealers and his competitors makes possible a price advance in the local area, and a price advance is announced. In some instances the decision is correct; in other instances, it is incorrect. If the decision is incorrect and competitors do not follow, the local manager has to decide whether he should sit tight, lose gallonage, and hope competitors will soon follow, or reduce the price again. Occasionally the local manager makes the wrong decision; but if he makes the wrong decision too often, his company does not remain the leading marketer in the territory and he does not remain the local manager very long.

The central sales organization of the leading marketer has been watching throughout the period the statistical position of the industry and the sum total of all the local situations of the character just described. When the number of subnormal markets is small, when basic gasoline prices (Gulf cargo market and

Midwest tank car market) are firm and showing a tendency to rise, when production and stocks are in balance, when costs are increasing, conditions are ripe for a general price advance. Under such conditions the industry generally will be eager for an advance but will be afraid to take the step before the leading marketer in the territory for fear of losing business. The leading marketer will also be anxious to go up but will also be afraid of losing business. For example, in 1937, the company which is the leading marketer in a certain Midwest area observed that the statistical position of the industry was strong. Basic market prices for gasoline were firm. All these considerations pointed toward a price advance, but a tabulation of the whole territory showed that many areas were below the generally prevailing price; i. e., the number of subnormal markets was large. From long experience the executives of the company knew that such conditions forecast that many competitors would fail to follow the price advance. Therefore they concluded that an advance in the price was impossible.

In the same period in 1937 the executives of the Colonial Beacon Oil Co., a subsidiary of the Standard Oil Co. (New Jersey), saw the apparently strong basic position of the industry and announced a general price advance on July 13, 1937, throughout the New York and New England territories. In that territory the leading marketer by far is the Socony-Vacuum Oil Co. In spite of the fact that the advance was based on a sharp increase in transportation cost from the Gulf, on a firm Gulf cargo market, and on a strong statistical position in the industry, competitors failed to follow. These competitors apparently had a different appraisal of the situation. On July 15, therefore, the Colonial Beacon Oil Co. reduced the price throughout the territory by the amount of the advance. Failure to have done so would have resulted in heavy loss of volume. Subsequent events showed that the competitors' appraisal of the situation evidently was sounder, because the demand fell off shortly thereafter as the depression in the fall of 1937 deepened and the basic Gulf price began a slow decline.

In summary, therefore, the so-called price leadership in the petroleum industry boils down to the fact that some company in each territory most of the time bears the onus of formally recognizing current conditions. With increasing frequency companies other than the leading marketer prove too impatient to await the action of the leading marketer. If this description is accurate, the lot of the executives of the leading marketer—the local executives and the central office executives—is not a happy one. They must always consider themselves a target for the rest of the industry; they must always be subjected to criticism; and they are always in danger of taking a step with which competitors will not agree, with the penalty for misjudgment a sharp reduction in profits unless the misjudgment is rectified at once. In short, unless the so-called price leader accurately interprets basic conditions and local conditions, it soon will not be the leading marketer. Price leadership does not mean that the price leader can set prices to get the maximum profit and force other marketers to conform.¹

BASING POINT SYSTEMS

Besides giving a clear picture of how and why price changes take place, Mr. Swensrud's statement is interesting because it points out, through the example of the Colonial Beacon Oil Co., that prices on the Atlantic seaboard are not based on the Gulf quotations plus freight to Atlantic coast points. Nevertheless, Mr. Cook, in the course of his general discussion of basing point systems, said in regard to tank car or tank wagon prices on the Atlantic coast, "The Gulf coast price, plus transportation charges, is the tank car or jobber price at New York Harbor and other eastern seaboard cities." His basis for this contention is a statement in the Buffalo Courier-Express of January 29, 1930, describing an announcement of a new price policy by the Standard Oil Co. of New York. It would seem a serious weakness in the force of Mr. Cook's argument on the basis of pricing gasoline today that he accepts a statement made in the year 1930, 11 years ago, by only one of the many companies operating on the Atlantic seaboard. The fact of the matter is that tank car prices in New York Harbor

¹ Temporary National Economic Committee Hearings, pt. 15, pp. 8700-8702.

and other Atlantic coast cities are not always equal to the quoted prices in the Gulf plus transportation charges. This equality is seldom found and, if it does occur at any time, it is a result of accident, because prices in the various areas along the Atlantic seaboard are based upon the conditions of supply and demand in those areas. A comparison of Gulf coast prices plus transportation charges to New York Harbor with New York Harbor quotations will show no identity nor will the differential be constant. There is, of course, a general relationship between these two sets of prices, and this is to be expected because both places are parts of a common market, where the Gulf coast represents the source of supply and the contact with the world market and New York Harbor represents conditions of demand in a very large area of domestic consumption.

Mr. Cook also has something to say about pricing in other parts of the country, particularly the interior. He claims that the group 3 or Tulsa plus basis "is one of the best known basing points used by the major oil companies" and that "they (basing point systems) are used to maintain the price structure of majors and to realize price advantages from their control of transportation and strategic refinery locations." In regard to this contention also, Mr. Cook is dealing with situations which changed so many years ago that they have no present significance. In earlier days of the petroleum industry, the so-called group 3 or Tulsa plus basis was a factor in the marketing of gasoline. Before the gasoline pipe line came into existence and before Texas became the largest source of crude oil, the Mid-Continent area was supplied with crude and products chiefly from Oklahoma. Because of the importance of Oklahoma as a source of crude and the fact that products were consumed outside that State and necessarily moved by rail, the railroads quoted a single rate for the movement of gasoline to any one destination from any one of several refinery points in the Mid-Continent area. These facts provided the basis for the Tulsa plus basis of pricing. As crude oil from other areas began to compete with that from Oklahoma and as gasoline pipe lines were constructed, the importance of Tulsa quotations tended to become less. Tulsa quotations do not determine quotations elsewhere in the interior nor does "Tulsa plus transportation by rail" provide the basis for quotations of tank car lots in Chicago or other Mid-Continent consuming areas. T. N. E. C. testimony on this point was presented by many different people. Excerpts are presented below:

The following exchange of comments took place during the testimony of Mr. Paul E. Hadlick, secretary, National Oil Marketers Association, Washington, D. C.:

Mr. SNYDER. Have you been familiar with the so-called jobber contracts over any period of time?

Mr. HADLICK. Well, I have watched the development from 1924, on, yes.

Mr. SNYDER. Take the Middle West area, for instance. At what price does the major company jobber buy gasoline from the major company under those contracts?

Mr. HADLICK. Usually it is 5½ cents under the Tulsa price in the publication known as Oilgram, or under the Midwest market of the Chicago Journal of Commerce.

There has been a tendency recently for those contracts not to refer even to that, but simply to the 5½ cents under the supplier's tank car posted at the point, not of shipment, but of delivery, in both cases with a provision for a split in case of a local price war.²

² Temporary National Economic Committee Hearings, pt. 16, p. 8885.

Mr. Swensrud in his testimony said that sales to jobbers in his company (Standard Oil Co. of Ohio) were made at prices tied to the price to dealers.³ He also made the following statements concerning price quotations in general:

At the outset it is desirable to explain and destroy two widely prevalent misconceptions in regard to prices in the petroleum industry. In the first place, it is necessary to make a clear-cut distinction between posted or published prices, on the one hand, and the prices at which goods actually move, on the other hand. As will be pointed out in detail in the course of the discussion of particular kinds of prices, a substantial proportion of the business is done at prices which are not those posted or published. The assumption that all or almost all the business is done at posted prices has led many investigators into completely fallacious reasoning. For example, comparisons have been made of posted tank car prices with posted tank wagon prices, purporting to show the spread or margin available to jobbers. In fact, for many companies and for many territories the great bulk of the jobbers do not pay the posted tank car price. Again, one encounters comparisons between posted retail prices and posted tank wagon prices which purport to show the spread or margin available to retailers. Actually, as many motorists will testify, a considerable share of the retail business is done at less than posted prices; and it is by no means certain that dealers consistently and uniformly pay posted tank wagon prices.

In the second place, it is essential for an understanding of the price-making procedure to distinguish between the form in which prices are quoted, on the one hand, and the considerations which are taken into account in arriving at the figure on the other hand. The need for this distinction can best be made clear by an illustration. Assume a refinery located at Coffeyville, Kans., and a jobber located at Clinton, Mo. The jobber calls the Coffeyville refinery for a price quotation. The refiner replies that the price is 5 cents plus $\frac{1}{2}$ cent freight from Coffeyville to Clinton. The jobber replies, "That doesn't mean anything to me; what is the price, group 3?" The refiner calculates the equivalent of his Coffeyville price at group 3. If the transportation rate from group 3 to Clinton is 0.8 cent, the refiner replies that his price is 4.7 cents group 3 plus transportation charges. In other words, he has adjusted the form of his price quotation to that most convenient for his customer who wants price quotations on the same basis to facilitate comparisons. But this form of price quotation does not in any way indicate how the price is actually made. Even if through long experience and many repetitions of the request for Group 3 prices the refiner in Coffeyville is led in the first instance to quote his price in the form of 4.7 cents group 3 plus transportation, it is no more than a form of price quotation and has no significance in the question of how prices are made.

There are, of course, many kinds of prices in the petroleum industry; Gulf cargo market prices, group 3 tank car prices, consumer tank car prices, refinery tank car prices, tank wagon prices, undivided dealer tank wagon prices, divided dealer tank wagon prices, retail prices, crude prices. In addition, of course, there are a variety of prices for petroleum products other than gasoline.⁴

It is clear from the above discussions that basing point systems at present play no significant part in the pricing of gasoline. With regard to "Tulsa plus" Mr. Cook was referring to an era long past in the petroleum industry. With respect to Atlantic coast prices, there is no foundation for his statements.

ETHYL GASOLINE CORPORATION

Another contention of Mr. Cook not specifically related to the question of control over jobbers and dealers had to do with the Ethyl Gasoline Corporation. His chief contention here is that the use of the fluid (tetraethyl lead) is contingent upon an agreement to maintain a differential price between grades of gasoline including ethyl fluid and those not including it. It is true that the Ethyl Gasoline

³ Ibid., pt. 15.

⁴ Temporary National Economic Committee Hearings, pt. 15, pp. 8691-8692.

Corporation insisted upon such a differential and became involved in litigation on this account. This controversy involved the question as to how far a corporation granted a monopoly through the Patent Office could go without running afoul of the antitrust laws. The courts found against the corporation, and the use of such contracts was abandoned. The Ethyl Gasoline Corporation was trying to establish a brand preference for its product and insisted upon the maintenance of a price differential as a part of a program to achieve that result.

There is no evidence that independents were prevented from use of the fluid so long as they complied with the agreements embodied in the contract. In fact, there is ample evidence that it is widely used both by independents and majors. It is also a fact that one major oil company (Sun Oil Co.) has never used the fluid but markets an unleaded product obtained through processes of its own.

Mr. Cook also makes a point of showing that the cost of the different amounts of tetraethyl lead in regular and premium gasolines is less than the suggested difference in selling price. He implies that the only difference between regular and premium grade motor fuel is the amount of tetraethyl lead content. Close examination of the specifications⁵ for the two grades, however, shows that there are other differences between them. The difference in lead content does not measure all the differences in manufacturing costs, including crude oil costs. Furthermore, differences in manufacturing costs are not the only differences in total costs, because distribution costs are higher owing to the smaller quantity of premium gasoline handled.

JOBBERS

With regard to jobbers, Mr. Cook's claims are: (1) Jobbers have been eliminated by majors; (2) jobbers' margins have been narrowed by actions of majors; (3) the elimination of bulk plants through use of oil tank trucks has been detrimental to jobbers. This listing of complaints is the one used by Mr. Cook, and, after the comments under each heading have been read, these complaints can be consolidated into one, namely, that the majors are forcing the jobbers out of business through a variety of practices. The practices referred to by Mr. Cook are by and large the same practices which, in his opinion, give the majors control over retail outlets. Therefore, much of the discussion concerning jobbers will also have to do with service stations.

Mr. Cook uses the term "jobber" to mean any wholesaler of petroleum products in the ordinary sense of the word. The jobber is the person who operates a bulk terminal and performs the function of buying products from refiners and selling them to service stations or to ultimate consumers. Sometimes the jobber operates his own service stations. Mr. Cook is most particularly concerned about the status of the independent jobber who buys his supplies from independent refiners. In fact, one of his complaints is that many independent jobbers have been forced to become distributors of the major companies. According to Mr. Cook, the "jobber squeeze" is forcing the jobber out of business and it is brought about by deliberate action of major companies through a reduction of margins.

⁵ Ibid., pt. 14-A, pp. 7824-7827.

Testimony before the T. N. E. C. indicates that the jobber margin in cents per gallon has tended to become less. The proof given by Mr. Cook in table 13, page 43, is by no means conclusive, however, because the figures used for his computed delivered price in Des Moines were based upon tank car quotations in Tulsa plus freight, and there is no assurance that these were the actual prices paid by the jobbers and, therefore, no assurance that the jobbers' spread or margin is correctly stated. In spite of doubt about the correctness of the figures given by Mr. Cook, it may be admitted that jobber margins in cents per gallon have tended to decrease. Nevertheless, it is by no means certain that the margin expressed as a percentage of the price has decreased. As indicated by Mr. Swensrud [quoted below], there is a difference between talking of margins in terms of cents per gallon and in terms of percentage of price.

Since Mr. Swensrud also discussed some of the other complaints of jobbers referred to by Mr. Cook, most of his statement about jobbers is reproduced:

There are some differences between the complaints of the two types of jobbers, wholesalers and distributors. Basically, wholesalers complain that it is difficult to make a profit. Some of them even argue that the integrated companies deliberately endeavor to "squeeze" wholesalers out of the industry. To evaluate this complaint, we must look at the conditions under which wholesalers operate. They sell their own private brands of gasoline, not the brands of the large integrated companies. Because of advertising, product improvement, and service, the public generally accepts the brands of the integrated companies as the standard of value, and ordinarily does not buy less well-known private brands without a price inducement. This means that wholesalers' private brands of gasoline usually must be sold on a price-appeal basis. This, of course, is a situation quite common to a great many other industries, such as groceries, drugs, and cosmetics, for example. Since wholesalers must sell their private brands at prices below those of the brands of major companies, the problem is how to do it and still make a profit. Wholesalers ordinarily are not able to undersell on the basis of lower costs of bulk plant operation. Hence, if wholesalers are to undersell, they usually must accomplish this end by reducing retail costs through high-volume at cut prices or by buying at lower prices. Thus there are two situations in which wholesalers get along very well, namely, periods of business depression and periods of rapid exploitation of new sources of crude petroleum; for in both these situations there are plentiful supplies of cheap gasoline.

When States adopted proration laws, supplies available at distress prices may have been reduced, even though there was considerable gasoline available which had been made by small refiners from so-called "hot oil." With the passage of the Connally Act prohibiting interstate shipment of products made from "hot oil" and with the improvement in business and gasoline demand, the supply of lower-priced gasoline available to wholesalers has probably decreased. Some wholesalers opposed the passage of the Connally Act because they thought it would result in a small supply of lower-price gasoline. Continued agitation for repeal of the act comes from the same source.

One of the factors which has put the wholesalers under pressure has been the long downward trend in gasoline prices. The prices of the brands of the major companies have moved downward over a substantial period, to the great benefit of the consumer, but, of course, to the disadvantage of wholesalers who have to maintain a price differential below the prices of advertised brands. It is also important to keep in mind the fact that the large integrated companies have the most up-to-date refining equipment and have thus been able to improve the quality of gasoline to a very marked degree, whereas wholesalers buy much of their gasoline from small refiners who do not have the cracking equipment from which the better gasolines are ordinarily obtained. This quality difference increases the pressure on the wholesaler to maintain a differential between prices of better-known brands and his own prices.

Another development in the oil industry during the last 10 or 15 years has contributed to the difficulties of the wholesalers. The integrated oil companies have given more attention to the development of brand demand. In

the early stages of the industry, executives were busy with the pressing technical problems of producing and refining. When these problems were well on the road to solution, the companies sought to create a greater brand demand by increased advertising and sales promotion and particularly by the provision of stations and service which pleased customers and brought increased patronage. Alert wholesalers recognized the values of service and location; nevertheless, they did not possess the advantages of advertising. Not only did the company with widespread geographic coverage of stations receive business because of its brand advertising; but the fact of its coverage helped strengthen its brand position, for many customers like to use the same gasoline wherever they travel. The brand position of the large integrated companies was, of course, strengthened by the public recognition that such companies were taking the lead in the quality improvement already mentioned.

Turning now to the distributors, those jobbers who handle well-known brands, complaints from them are to the effect that the large integrated oil companies have deliberately reduced the margins of distributors in an effort to eliminate them from the industry. This idea of elimination is a false concept. Some refiners rely almost entirely on distributors and most refiners sell through distributors in parts of their marketing territory. Distributors therefore are considered by their refinery suppliers as an essential part of the distribution system for their gasoline. Because of their local standing, distributors frequently are preferred so long as they can operate at least as effectively as the companies themselves can. Naturally, it is true in the oil industry, as in any competitive industry, that manufacturers contract with distributors to perform wholesale functions only so long as the latter can do fully as effective a job as the manufacturer when he performs his own wholesale function. When a distributor fails to keep pace in methods of selling or in facilities for physical handling or when his costs or volume are out of line with what the manufacturer can obtain, the manufacturer usually undertakes the job of wholesaling himself.

For both wholesalers and distributors there has admittedly been a decrease in the margin or spread during recent years. In this connection, one peculiarity of the oil industry should be kept in mind. It is customary to think of margins or spreads in this industry in terms of so many cents per gallon. In many instances marginal contracts are used which provide that the price to the distributor is to be a certain number of cents off the posted tank wagon price in the territory; but whether marginal contracts are used or not, it is customary throughout the industry to think of margin or spread in terms of cents per gallon. This is quite a different point of view from that of a majority of other lines of business, where it is customary to think of margins in terms of percentages either of cost or of selling price, such as 16%, 20, 33½ percent and so on. Such percentage margins, of course, are not directly affected by price changes; but where margins are in terms of cents per gallon, it is manifest that the declining price structure of the petroleum industry must inevitably have exerted pressure on these margins.

The other chief factor which has exerted pressure on the margins of wholesalers and distributors is the decrease in the cost of performing the wholesale function, that is, the decrease in the cost of operating bulk plants. The major integrated companies have taken the lead in developments which have made this cost reduction possible. New transport trucks and new types of trucks for making deliveries from bulk plants to filling stations, coupled with improvements in highways, have brought lower unit costs directly and have made possible other savings from the consolidation of bulk plants. Many large integrated companies have been steadily reducing the number of bulk plants and increasing the quantities handled in each. Under the pressure of the last few years, intensive study has been devoted to the best methods of loading trucks at bulk plants and unloading them at service stations. Similarly, careful studies of truck routes have minimized backtracking and have reduced the number of trips with less than capacity loads. One company, for instance, has recently reported an increase of sales between 1933 and 1937 of \$90,000,000, while it was reducing its market expenses \$8,000,000. No one company has had a monopoly of these efforts, and it is therefore not surprising that competition among the companies has forced them to pass a large share of the savings on to their customers.⁶

As Mr. Swensrud has pointed out, there is no policy on the part of majors to make life more difficult than it used to be for the jobbers and there are definite reasons why the jobbers' spread has narrowed. Mr. Swensrud's statements regarding the improvement of distribution

⁶ Temporary National Economic Committee Hearings, pt. 15, pp. 8689-8690.

facilities, resulting in the elimination of bulk plants, are of particular interest, especially in view of Mr. Cook's complaints on this score. These improvements in transportation facilities are of direct benefit to the consumers, and it is surprising that Mr. Cook should have any complaint about changes which have such results. The elimination of bulk plants through oil tank trucks is part of the explanation of the lowering of the cost of the jobbing function which Mr. Cook found "difficult to understand." Furthermore, Mr. Swensrud also presented facts showing that jobbers are not being eliminated but on the contrary are increasing in numbers:

The best available evidence of the trend in the number of jobbers is found in the listings published by the Petroleum Register, owned by the magazine World Petroleum. This publication listed 1,580 marketers and jobbers in 1918, 2,259 in 1923, 4,508 in 1928, 8,273 in 1933, and 9,926 in 1938. These figures show a steady and substantial increase in the number of jobbers over the years. There has even been an increase between 1933 and 1938, a period during which complaints have been heard that jobbers were disappearing from the industry. It is the opinion of the writer that a more accurate indication of what has been happening is to be found in the public statement of the Socony-Vacuum Oil Co. to the effect that the number of its gasoline jobbers has steadily increased since 1931 and has more than doubled.⁷

A more recent statement concerning the place of the jobber in the oil business was made by Mr. Paul G. Blazer, president of the Ashland Refining Co., an independent refinery in Kentucky, in a speech given on February 3, 1941, before the Tennessee Oil Men's Association. He said:

For many years I have been interested in ascertaining the extent to which the large integrated oil companies subsidize their operations in certain branches of the industry at the expense of their earnings in other branches. I have discussed the subject with hundreds of different people representing almost every phase of the industry. Almost invariably the person I am talking to assures me that the particular branch of the industry in which he is engaged, is being ruined by the competition of the major oil companies which are subsidizing their unfair competition in that branch by drawing on their huge earnings from other branches of their business. Further questioning, however, often discloses that the profits of the person speaking are far larger in proportion to his investment than the overall return on the investments of the large integrated oil companies. I would say that almost invariably that is true in the case of independent marketers.

Of the hundreds of oil jobbers I have known, I do not recall, at this time, a single one who has become bankrupt, but I know of scores of them who have made small fortunes. If a young man with little capital but plenty of energy should come to me for advice concerning going into business for himself, I would advise him to become an oil marketer. One of the best arguments in support of that advice is the fact that the company with which I am associated sold a number of million dollars of petroleum products last year to independent jobbers without losing a dollar on credits. In more than 15 years of selling to independent jobbers, we have yet to lose pay for the first car of gasoline. That record would not be possible except for the fact that the independent jobbers, in the area where we market the output of our refinery, have always made money.⁸

Thus, Mr. Blazer finds that he as an independent refiner has been able to prosper by selling his products exclusively through independent jobbers who have also prospered.

The general review of the position of the jobbers given above does not show that they are being run out of business. Jobber margins measured in cents per gallon have in fact been narrowed, but this fact does not mean that percentage margins have decreased. In the face of a constantly declining retail price level, excluding taxes, it would not be expected that the spread of the jobber would remain

⁷ Ibid., p. 3639.

⁸ National Petroleum News, February 19, 1941, pp. 24-25.

constant. Part of the explanation of the lowered margins is to be found in the better methods of distribution which have been devised and have lowered costs. Credit for the cost reductions does not belong solely to the majors but is shared also by independent jobbers and distributors.

SERVICE STATION OPERATORS

With regard to service stations, Mr. Cook's chief complaints are: (1) There are too many service stations. (2) Major companies through lease restrictions and other means control service station operations. As to the first contention, Mr. Swensrud's statement to the T. N. E. C. contained the following pertinent comments:

People have been more conscious of the increase in the number of service stations than of the increase in the number of other kinds of retail stores because the service station stands apart from other buildings on a relatively large plot of land, and has an unmistakable appearance. The increase in the number of service stations, moreover, has taken place in a relatively short period.

The prime reason for the very rapid growth in the number of service stations in the United States is, of course, the great increase in the demand for petroleum products. A nation went on wheels in the space of a generation, and that development called forth the means of making the necessary products available. To induce the prompt provision of facilities for serving the demands of motorists, suppliers of gasoline assumed a part of the burden of making equipment available and established through wide retail margins an opportunity for substantial profits. Landowners and banks contributed to the rapid increase of service stations. Owners of land bordering on highways came to believe that the ideal use for the land was for a service station. Banks readily advanced money for erecting stations, and not infrequently urged owners of mortgaged property to erect stations.

To these reasons for the rapid growth in number of stations must be added two others which became increasingly important between 1929 and 1935. It is not too much to say that the Nation's highway system has been rebuilt during the last 15 years. Much of the rebuilding has taken the form of new routes without complete abandonment of the old. New stations were necessarily erected on the new highways, but in a large number of instances the stations on the old highways were not abandoned. Since a substantial proportion of the investment in a service station is fixed and immobile, the stations were retained, although with a smaller scale of operation, so long as the receipts provided any margin over the direct costs incurred. In urban sites, particularly, the tendency to retain stations after important changes had taken place in the flow of traffic was reinforced by the failure of alternative uses for the land to develop.

A second additional reason for the growth in number of service stations appeared during the depression which began in 1929, when extensive unemployment in industry provided a potent factor making for the increase. Between 1929 and 1933, for example, there was an increase from 98,976 to 156,538 in the number of proprietors of filling stations reported by the census. A large number of people, unable to find employment in their accustomed occupations, sought a livelihood by opening retail stores. The tendency was particularly pronounced in those retail trades where the investment required is relatively low and where, in the general belief, the problems involved are not complex. Restaurants and filling stations meet these requirements particularly well, and the number of these two types of retail outlets increased greatly between 1929 and 1933.

This summary leads to the question, "Are there too many filling stations?" As has been noted, the statement is frequently made that there are too many stations, and many people within and without the industry have accepted the statement as wholly valid. As the figures cited above show, there can be no denial that the increase in the number of stations was very rapid. Throughout the late 1920's and early 1930's, at least, the increase in number of stations outran the increase in consumption of gasoline. But does this mean that there are too many filling stations today? What is the yardstick by which too many is to be measured? The answer depends upon the point of view. Critics often refer to the high gallonage per station of the earlier years of the industry as evidence of the more effective utilization of capital at that time. But that contrast presents only a part of the picture. It entirely disregards the economic loss and the inconvenience involved through customers having to seek out the relatively few

stations. Almost all automobile drivers of the period which is extolled because of the high gallonage per station testify to the need in those days for carrying a reserve supply of gasoline, for planning carefully where purchases would be made, and the like. In other words, maximum utilization of filling station equipment alone is by no means the whole test. The point may perhaps be illustrated by the parable of the pair of scissors. If one were seeking to secure the maximum utilization of the capital investment represented by a pair of scissors, there would be on any street a single, cooperatively owned pair. Each housewife would borrow the pair of scissors from the existing holder when she needed them. In this way the scissors would be utilized a very large proportion of the time. In contrast, the actual situation is that each household on the street has its own scissors with the result that the capital investment is used only a very small percentage of the time. But the low utilization is willingly endured because of the extreme inconvenience of securing high utilization.

The importance for gasoline marketing of catering to customers' convenience cannot be overemphasized. Time spent by salesmen and truck drivers in waiting for service at a filling station is an economic loss. Even more important, inconvenience in gasoline supply cuts from the pleasure of automobiling. The assurance of many and convenient sources of supply is an important stimulant to long-distance touring in unfamiliar sections of the country. It is therefore a mistake to assume that all the gasoline sold in one filling station reduces the amount sold in others. The convenience of many filling stations has increased the total demand.

The casual critic of the number of filling stations, moreover, seems to be misled in several ways. He is very likely to cite the instances where there is a station on each of the four corners of intersecting highways as the typical example of the uneconomic capital investment and the uneconomic utilization of manpower. Such a critic, we presume, would grant the desirability of two stations at the intersection because traffic moves in two different ways. If this assumption is not correct, the critic ignores the very strong reluctance of most motorists to cross traffic to enter a filling station. Many companies have placed stations on opposite sides of the same highway and found both stations profitable. The critics also neglect the readily observable tendency of all types of retailers to congregate in order that they may reinforce each other in inducing the customer to buy. There is no intention to overstate the importance of this consideration, but it is of some significance. That is, if the four stations were each a quarter of a mile from the intersection, the impression of a multitude of stations would be less; yet experience justifies the observation that many motorists will travel past a single station whereas if there are several stations they will stop and purchase.

Furthermore, the critics who see that equipment and manpower in filling stations are idle much of the time assume that this idleness is the result of extensive duplication of facilities. An example of such criticism is the study made some years ago in which it was computed that the gasoline requirements of American motorists could be served by one-third the number of stations actually in operation. This conclusion was arrived at by determining the length of time required to complete a transaction, estimating the number of transactions represented by the total consumption of gasoline, multiplying the two figures, and dividing the number of station-hours so determined by the number of hours the typical station was open. Such computations and such reasoning neglect entirely the fact that traffic and custom move in waves. Perhaps the outstanding study of traffic and trade movements has been published by Paver and McClintock, reporting on the Studies of the Bureau for Street Traffic Research of Harvard University.⁹ As the studies show, there is a very sharp hourly variation in the movement of motor vehicles. Since the purchase of gasoline is an incident of travel for other purposes, the fluctuations in traffic movement are paralleled by fluctuations in transactions at filling stations. If the number of stations were notably less than the number actually in existence, there would still be a substantial part of the day during which there would be little utilization of equipment and manpower; on the other hand, during the hours of heavy traffic there might well be much congestion at stations and inconvenience to the public.

But the hourly fluctuation in traffic is not the only fluctuation. There is a distinct rise in traffic during the latter half of the week. That is, as shown by the Paver and McClintock studies, if the average traffic is taken as 100 percent, Friday traffic typically represents nearly 110 percent, and Saturday 115 percent.

⁹ John Paver and Miller McClintock, *Traffic and Trade*, New York, McGraw-Hill Book Company, Inc., 1935.

There are, moreover, distinct seasonal fluctuations in vehicular traffic. For the country as a whole, traffic movement in January and February is slightly less than 90 percent of the average month; whereas the movement in June, July, and August is 110 percent of the average month. These figures for the country as a whole do not fully reveal the significance of seasonal fluctuations. In many sections of the country, notably those characterized by extensive tourist movement, the fluctuation is even more pronounced. The Survey of Current Business for January 1939, showed, for example, that while 16,441 cars visited the national parks in December 1937, the high for the next year was 238,139 cars, or more than 14 times as many. Again, during the summer months the motor traffic on Cape Cod in Massachusetts is very congested. If the needs of the public are to be served, there must be heavy investment in service stations on Cape Cod to meet a demand which lasts for no more than 3 months of the year. During the remainder of the year the investment in service stations is clearly greatly in excess of any "requirement of need or convenience." But unfortunately service stations cannot be put in and taken out at will.

These considerations should at least be weighed before accepting the conclusion that there are too many gasoline retailers in the United States. On the whole, however, it is believed that, while in some instances in the past the criticism of excess building of service stations may have been justified, yet the charge can be and often is greatly exaggerated. Now that we are reaching the stage when many older stations are being eliminated through deterioration and obsolescence, the problem of excess cannot be considered a serious issue. It must be remembered too that gasoline consumption in 1939 is running approximately 45 percent above 1929 and 43 percent above 1933, so that the growth factor has tended to cure a good deal of whatever excess may have existed. There is no intention to deny that there is unused capacity in petroleum retailing, just as there is in every other form of retailing. A nice adjustment of equipment to need and convenience may be the ideal of the theorist, but it is hardly to be expected in a trade where decisions are made by thousands of people and where ease of entrance is relatively great. In this connection it should be noted that gasoline retailing is easily and naturally combined with other retail enterprises, such as roadside restaurants, general stores, garages, and tire and automobile accessory stores.¹⁰

Mr. Cook furnishes no data to prove his allegation that the marketing branch of the industry is overbuilt. He failed to take into consideration the reasons for constructing service stations pointed out above. Apparently his conclusion was based merely upon the opinion that 200,000 service stations was a large number of retail outlets.

Mr. Cook registers many complaints concerning relations between major companies and service station operators. He criticizes having service station operators use one company's products exclusively, and he asserts that major companies use "certain tactics" and "threats" to obtain 100 percent stations. He also contends that dealers have to bear the cost of any price war because the majors will not reduce tank wagon prices in such cases. He asserts that "virtually all leases made by the majors" have 10-day cancellation clauses in them. He appears to believe also that pressure from major oil companies through the railroads has worked toward the elimination of trackside operators.

Most of these complaints serve as evidence that the retail division of the petroleum industry is extremely competitive, and lead to the conclusion that Mr. Cook's basic complaint is that major companies compete unfairly. Since Mr. Cook appears to be particularly concerned about exclusive contracts with dealers, that topic will be discussed first.

In the first place, the exclusive contracts of which Mr. Cook complains apply only to those stations owned by the oil companies and leased to operators or to those held on relatively long-term leases by the oil companies and subleased to operators. A service station operator who owns his station or who leases from an outsider is not

¹⁰ Temporary National Economic Committee Hearings, pt. 15, pp. 8678-8681.

bound by contract to purchase all the products he sells from or through the supplying company. Mr. Cook's short quotation from Mr. Farish's testimony gives a highly misleading impression of the true state of affairs, as is indicated by the more complete quotation given below:

The VICE CHAIRMAN. Now, when they go out of business and lease those plants of theirs, is it the custom now to require that the lessee shall deal only in the products of the company that owns the property that is leased?

Mr. FARISH. Not in our company; no, sir.

The VICE CHAIRMAN. You just make a straight lease?

Mr. FARISH. A straight lease. But, obviously, that lease has taken on a basis that he wants to handle our products, but there is no prohibition in the lease.

The VICE CHAIRMAN. He wouldn't last very long, would he, if he got to selling the other fellow's product?

Mr. FARISH. He has a year's contract; he has a year's lease, and many of them do sell lubricating oils and other accessories that we don't sell.

The VICE CHAIRMAN. And you sell to the independent man on the same basis that you sell to him?

Mr. FARISH. Yes, sir.

The CHAIRMAN. Could we say, then, that testifying before the Temporary National Economic Committee, the president of the Standard Oil Co. (New Jersey) said today that no lessee of that company is under any obligation to sell only the products of the Standard Co. at his station, and that at the expiration of his lease if he did sell such products, he would not be in any danger of cancellation?

Mr. FARISH. Please separate your question. If you leave off the last phrase, the answer is "Yes."

The CHAIRMAN. That is what I thought it would be.

Mr. FARISH. If you add the last phrase, I think it might be different.

The CHAIRMAN. I think that is a very frank answer, Mr. Farish, and it goes to the heart of the control of retailing. That is exactly the complaint that the retailers made—that if they exercise their independent judgment to sell products other than those furnished by the lessor company, their leases would be in danger, and you tell us that is the fact.

Mr. FARISH. I think that is the fact, certainly. If you will permit me, I don't see anything wrong with that, morally wrong with that.

The CHAIRMAN. I am not trying to imply anything wrong. I am merely trying to get the facts.

Mr. FARISH. There is nothing unfair about it. The number of owner's stations that are leased out is so relatively small a number of the total that it is not a serious question; it doesn't affect the economics of the retailing of gasoline in this country.

* * * * *

Senator KING. How many stations sell the products of your companies?

Mr. FARISH. How many—

Senator KING. How many of these filling stations?

Mr. FARISH. How many filling station outlets do we sell to? Approximately 25,000.

Senator KING. What proportion of that 25,000 are owned by or leased by your company?

Mr. FARISH. That are owned and leased by our company—a little over 2,000—2,200, I think it is—or twenty-one-hundred-and-something.

Senator KING. So it would be two twenty-fifths.

Mr. FARISH. Yes, sir.

Senator KING. And those persons who have their own filling stations, not yours, either by ownership or lease, they are at liberty to sell to whom they please, and if they care to buy from you they may, or if they care to buy from some other oil company they may do so.

Mr. FARISH. Certainly.¹¹

From the above testimony it is clear that Mr. Cook has carried Mr. Farish's testimony considerably further than it actually went. Only 2,200 of the 25,000 outlets served by Mr. Farish's company were subject to lease agreements.

¹¹ Temporary National Economic Committee Hearings, pt. 17, pp. 9723-9724.

Mr. Cook attaches an unwarranted meaning to the word "control" when he speaks about "control" of service stations by majors. A more accurate description of the relationship between them is that it is close. Both Mr. Farish and Mr. Swensrud¹² presented testimony explaining the need for close relations between suppliers and service station operators. Mr. Farish's comments were as follows:

* * * This relationship involves a mutuality of interest of considerable importance. The gasoline retailer handles a limited range of products from which he often obtains his whole livelihood, and his place of business carries the sign and trade-marks of the supplying company. The latter wants each outlet to be a good advertisement for the brands of the supplier as a result of good standards of service, equipment, and display. The supplier depends upon these highly specialized individual businessmen to make his wares available to the public. He cannot be wholly indifferent to their welfare, because he wants them to remain in business. The oil industry is not unique in this latter respect. There is no point in some comparisons that have been made between retailers of gasoline and retailers of groceries, drugs, and the like. A much more pertinent comparison may be made between retailers of gasoline and retailers of automobiles. As Mr. Pew said, the Chrysler Corporation would be in an absurd position if it filed complaints that Ford dealers do not carry Chrysler cars or parts. Large investments in inventory and in service equipment prevent small businessmen from carrying several brands of cars. From the sales and service standpoint, the car dealer whose organization concentrates on the problems of one brand does a more effective job and makes more profits for the capital invested than if several makes are carried. The car manufacturer, on his part, has an outlet that pushes his make of car. The car maker helps his dealers with training courses for salesmen and service men, and he provides them with local promotional material as well as a national advertising program. The analogy between automobile retailing and gasoline retailing, of course, is not complete, but certainly it is more apt than a comparison with grocery stores which carry products of hundreds of manufacturers, no one of whom has a prime interest in the success of a particular store. Both automobile makers and the oil companies want to keep their customers in business, but neither group can guarantee a profit to every retail outlet.¹³

It is evident that there is a need for a close relationship, both from the standpoint of the supplier and from that of the operator of a service station. But such cooperation does not provide a basis for concluding that there is control by the supplier in a dictatorial sense. Furthermore, if the major companies failed to do many of the things they do for the service station operator, they could be accused of being indifferent to his welfare and to that of the consuming public.

To Mr. Cook's charge that virtually all leases have 10-day cancellation clauses in them, it should be said that in the days immediately following the time when most major companies discontinued the operation of service stations such leases were common. Today, however, most leases are made for 1 year or more. Furthermore, there was at the earlier period a logical reason for reserving a cancellation privilege. Mr. Farish testified on this point as follows:

Retail marketing has always been predominantly in the hands of small-scale independent businesses, and it appears that they will not be displaced in the future. Since the extension of the so-called Iowa plan, the ranks of independent businessmen have been augmented by the addition of former salaried managers of company-owned stations. Several witnesses before this committee have testified that these men are not really independent because they are continually threatened by salesmen who suggest that 5-day cancellation clauses in leases of company-owned stations will be invoked if the lessee does not do this or that. No doubt such tactics have been used by some salesmen in some companies, but I state emphatically that one cannot generalize on the basis of incidents which not only are exceptions but which also directly violate the established policies of

¹² Ibid., pt. 15, p. 8681.

¹³ Ibid., pt. 17, p. 9739.

the managements concerned. Oil companies had numerous business reasons for 5-day clauses originally. Many salaried employees do not have the capacity to become independent businessmen, and as a matter of self-protection the oil companies wanted to be able to find new proprietors for stations if the former managers did not succeed on an independent basis. Today most leases are made for the period of 1 year or longer and contain no cancelation clause whatever. For instance, leases for 1 year or longer without cancelation clauses are now used by my company.¹⁴

Mr. Swensrud's testimony¹⁵ substantiates the views on the leasing question presented by Mr. Farish. Mr. Pew¹⁶ also stated that leases were made for a year and that there was no general right of cancelation on a certain number of days' notice.

Mr. Cook makes the charge that major companies use "certain tactics" and "threats" to obtain exclusive contracts with dealers. Among these "tactics" is the practice of charging one-half cent more per gallon of gasoline delivered to a service station which sells more than one brand. Mr. Cook gives no explanation of the reasons for this differential. He simply characterizes it as one of many practices, the primary aim of which is to keep independent products off the market. He ignored the explanation of the differential given in the T. N. E. C. record. Mr. Pew, Mr. Swensrud, and Mr. Farish all testified that it costs more to serve a split account. The storage capacity of the tanks which a service station can have is limited in many cases by zoning restrictions and fire regulations, and deliveries to split accounts may have to be made in smaller quantities. Mr. Pew said the difference in delivery costs to serve a split dealer was greater than one-half cent.¹⁷ Mr. Swensrud stated that one company calculated the difference in delivery cost alone to be one-fourth cent per gallon.¹⁸

Mr. Cook also asserts that service station operators have to stand the cost of price wars because service station prices are competitive while tank car prices are rigid. The influences affecting prices and the processes by which they are set have already been described, and it is clear from this testimony that tank car and tank wagon prices must and do reflect changes in retail prices. They are not rigid any more than retail prices are rigid. Suppliers suffer from the effect of price wars just as do retailers. The demand for gasoline is inelastic, as stated by Mr. Cook, and drastic reductions reduce the income of all parties concerned. If tank car prices were really rigid, it is likely that many dealers would be forced out of business. Such a result would certainly not be to the advantage of the supplying company since outlets would be lost. In this connection, Mr. James A. Horton, chief examiner, Federal Trade Commission, said in his testimony before the T. N. E. C.:

* * * but generally the Commission is in possession of no convincing proof that any major company has, as a matter of policy, intentionally brought economic ruin upon its own retail dealers.¹⁹

The use of credit cards by majors is also condemned by Mr. Cook. The complaint is that their use "makes it more difficult for the independent jobber or refiner to compete, since he usually sells in a vary

¹⁴ Ibid., pp. 9738-9739.

¹⁵ Ibid., pt. 15, p. 8684.

¹⁶ Ibid., pt. 14, p. 7209.

¹⁷ Ibid., p. 7208.

¹⁸ Ibid., pt. 15, p. 8685.

¹⁹ Ibid., pt. 16, p. 9134.

limited area and does not have reciprocal dealings with other companies for credit." By Mr. Cook's own admission, it is the use of credit cards by motorists on long trips about which he is particularly concerned. Now it is obvious that most motorists on long trips would not be likely to purchase a brand of gasoline they never heard of. Therefore the seller of locally branded gasoline has little opportunity of attracting such customers whether or not they can buy on credit. The reciprocal agreements among many companies with respect to credit cards came into existence because such companies did not have national distribution and desired to meet competition of companies, such as the Texas Corporation, which did. Also, the independent jobber selling a local brand of gasoline and confining his activities to a local area can offer credit locally and probably does in many cases. He is not under any severe handicap because of his local scale of operation. Mr. Blazer, an independent refiner quoted above in connection with the discussion of jobbers, did not believe that either his own opportunities or those of the independent jobbers were lessened by the fact that they were all operating in a local market.

The last specific allegation of Mr. Cook to be discussed has to do with the "elimination of trackside stations." The contention here is that the Association of American Railroads and 13 major oil companies had a working agreement which would operate to the disadvantage of the trackside service stations. Mr. Cook referred specifically to a letter written by Mr. J. J. Pelley, president, Association of American Railroads, to 13 major oil companies.

The so-called "Pelley letter" is claimed to have been an outgrowth of a conference between railroads and oil companies for the purpose of discussing rates. Mr. E. S. Hall²⁰ senior counsel for Standard Oil Co. of New Jersey, and Mr. H. T. Klein,²¹ general counsel for the Texas Corporation, testified before the T. N. E. C. that so far as they knew the subject matter of the Pelley letter had never been discussed during the conferences on railroad rates. They also testified that these two companies wrote letters to Mr. Pelley saying that the suggestions contained in his letter could not be considered.²²

In the foregoing pages it has been shown that there is no valid foundation for the claims made by Mr. Cook with respect to the marketing division of the petroleum industry. Jobbers are not being eliminated as he stated, but are increasing in number and, as shown by Mr. Blazer, have a definite place in the industry. Service station operators likewise are not "controlled" by the majors and are not being forced out of business. Prices are extremely competitive, and this fact alone accounts for many of Mr. Cook's complaints. There is nothing iniquitous about price leadership. A price leader is merely the marketer who publicly announces the changes in price brought about by market conditions. He cannot and does not control prices.

The foregoing discussion of marketing concludes the examination of Mr. Cook's treatment of the conditions in the four principal branches of the petroleum industry. In each part of his discussion, he has ignored much of the testimony before the T. N. E. C. and he has analyzed inadequately much of the testimony which he does not

²⁰ *Ibid.*, p. 9100.

²¹ *Ibid.*, p. 9118.

²² *Ibid.*, Mr. Hall, p. 9095; Mr. Klein, p. 9121.

ignore. By attempting to prove or suggest a gigantic conspiracy among the majors to oppress all the independents, by attacking the industry at every point, he has failed to make a thorough study of the facts and a careful appraisal of the arguments. By attacking everything, by not concentrating on the most troublesome problems of the industry, he has failed to make any constructive suggestions to deal with the conflicts of interest and to develop a program which will do justice to all parties in the industry and advance the national economy.

He has failed to appraise the industry from the standpoint of the national economy. He has ignored the fact that the T. N. E. C. was primarily interested in ways to increase the employment of men and capital and to add to the national purchasing power. Unfortunately perhaps, Mr. Cook did not look at the problem from the consumer point of view; he was little concerned with efficiency of operations. As he stated in his preface, "the consumer aspect of the problem of the majors' control of the industry is not developed in this survey." Mr. Cook has ignored all the achievements of the industry and its great contributions to national welfare and strength. The following chapter will try briefly to make up for so serious an omission.

THE ACHIEVEMENTS OF THE PETROLEUM INDUSTRY

If the results of an industry's activities are to be called achievements, if it is to be called a success from the point of view of the well-being of the whole national economy, the results have to be measured by generally accepted standards. What are those standards? Clearly they are something more than sales, costs, and profits, which determine success from a private financial point of view. The most commonly accepted standards evaluate the industry from the point of view of the consumers, the employees, the competitors, the investors, and the Government. From any point of view, an industry has to be progressive in technology and management to meet the other standards. From the consumers' point of view, the standards are good and improved products, sold at low prices, distributed in a convenient manner. From the employees' point of view, the standards are high wages, reasonably short hours, stable employment, and fair and courteous treatment of the individual. From the competitive point of view, all that can fairly be required is the standard of free opportunity for efficient enterprises to enter into and remain in the field. From the investors' point of view, the investment should be reasonably safe and adequately rewarded, and the financial results of the operations should be clearly reported. The Government's standards should embrace all the others and look especially at conservation of irreplaceable natural resources and adequate support to national defense in times of emergency.

The petroleum industry meets these standards so well that its results may well be called its achievements. Whether we look at the quantity, quality, and prices of products, at technological progressiveness, at labor conditions, or at adequate preparedness, the industry meets the standards of success from a public point of view. Achievements are conspicuous in every branch of the industry and in every phase of its activities.

In the production branch of the industry, the majors and the independents have been so successful in finding new oil reserves that it is now possible to satisfy the demand for crude oil without doing violence to conservation and robbing the future by prematurely exhausting the reservoir energy and leaving recoverable oil in the ground. For 1926, proven oil reserves were estimated by the Federal Oil Conservation Board to be 4,500,000,000 barrels; for 1938, there were estimated by the American Petroleum Institute to be 15,856,000,000 barrels. In 1926, the proven reserves were somewhat less than 6 times the annual domestic production of crude oil; in 1938 the proven reserves were over 13 times the annual domestic production of crude oil. This increase in oil reserves is a result of the application of the modern scientific methods which Mr. DeGolyer outlined to the T. N. E. C. Much of the gamble has been taken out of exploration effort. The figures for the growth of crude oil reserves are given in table 3.¹ As a result of the technical improvements in drilling, it is

¹ See p. 70 *infra*.

now possible to drill to depths long thought impossible. Both the deepest drilled depth and the deepest producing depth have increased. In 1928, both of these were 8,523 feet; in 1938, the deepest drilled depth was 15,004 feet and the deepest producing depth was 13,206 feet. These and other figures may be found in table 4.²

As a result of proration, which the industry and State governments have developed and which the Federal Government has aided through authorizing the Interstate Compact and passing the Connally Act, the wastes of competition engendered by the rule of capture have been checked and the industry has learned the technique of orderly production. These developments in the production branch of the industry have greatly strengthened the whole American economy, both in time of peace and in time of defense.

In the transportation branch, the industry has developed its specialized and economical forms—the pipe line, the tanker, and the transport truck. By its prompt extension of crude pipe lines to newly developed oil fields, it has brought the world market to the door of all the producers. The number of miles of petroleum pipe lines of the companies reporting to the Interstate Commerce Commission increased from 81,676 in 1928 to 95,973 in 1938.³ By reducing the costs of transportation, the industry has found economies which competition has passed on, partly back to producers in the form of better prices for crude oil which encourage new finding effort and partly forward to consumers in the form of lower prices for refined products.

In refining, technical developments have reduced costs and increased gasoline yields. In 1928, 15.7 gallons of gasoline were obtained from a barrel of crude oil on the average; in 1938, 18.6 gallons were obtained. More figures on gasoline yields are given in table 5.⁴ As a result of improved processes, the demand for gasoline can be satisfied with less drain on crude oil reserves. The annual quantity of crude oil conserved by cracking has been estimated to have reached 1,283,437,000 barrels in 1938. The figures for earlier years back to 1920 are given in table 6.⁵ The old process in which crude oil was refined in batches was succeeded by the continuous process; later the cracking processes were introduced to break down the heavier hydrocarbons and to increase gasoline yields; and more recently catalytic cracking has been developed to cut cost, increase gasoline yields, and improve quality. These technical developments have made possible great improvements in the design of automobile and airplane engines and have increased the supply of quality fuels for the vital needs of national defense. The achievements of refinery technology also may be seen outside the production of motor fuel; of the other improvements, that in motor oil is perhaps the best known and best appreciated. In addition to the products for use in automobiles, the industry has manufactured many other products from crude petroleum; of the hundreds that might be mentioned, toluol for use in explosives and synthetic rubber are those that have most recently attracted public attention.

In the marketing branch of the industry, vigorous competition has led both to improved services and reduced costs. The improved services are well known to the public. The car owner can patronize any of the numerous conveniently located filling stations; usually he

² Idem.

³ Petroleum Facts and Figures, 6th ed., 1939, p. 99. For summary statistics of pipe line companies, see table 2 in the appendix, p. 70 *infra*.

⁴ See p. 71 *infra*.

⁵ Idem.

does not even have to run his car across the street. At almost any hour the motorist can find a station that is open. He is accorded courteous treatment by well-trained attendants, and finds available the facilities of modern equipment for dispensing gasoline and motor oil as well as for lubrication and minor adjustments and repairs. He finds carried in stock supplies and accessories, such as tires, batteries, chains, polishes, antifreezes, and the like. He is assured of reliable products of standard qualities. The reduced costs are less well known to the public. Economies have been made in wholesale marketing, both in the operations of bulk plants and terminals and in the transportation of products from refineries to filling stations. The economies have been so great, in fact, that the total cost per gallon for marketing, both wholesale and retail, is now less than before, even before marketing services have been so conspicuously improved.

As a result of the improvements in all branches of the industry, the public has been given a wide variety of petroleum products in increased quantities, in improved quality, and at lower prices. Gasoline consumption increased from 79,949,000 barrels in 1918 to 338,881,000 barrels in 1928, and to 521,657,000 barrels in 1938.⁶ The great increase in gasoline production has far outstripped any other commodity in general use. The public is familiar with the improvements which result in easier starting, quicker pick-up, and reduced knocking, and with the greater power of the motor engines which have been designed to take advantage of the kinds of gasoline now available. The general public is little concerned with such technical characteristics of gasoline as volatility and antiknock ratings, although they measure important technical advances. The figures on these characteristics available in the T. N. E. C. record are given in table 8.⁷

With all the increased consumption and improved quality has gone a great reduction in the cost of gasoline to the consumer, although this reduction is somewhat obscured by the large increases in gasoline taxation which have made the industry one of the greatest contributors to the Public Treasury.⁸ This great reduction in the cost of gasoline is of the utmost significance; it not only immediately affects the pocketbooks of millions of Americans but also indirectly increases their power to purchase other commodities and thus acts to reduce idleness of men and machines. The average annual price of gasoline, exclusive of tax, at service stations has declined from 29.74 cents per gallon in 1920 to 17.9 cents in 1928 and to 14.07 cents in 1938.⁹ The course of retail prices for the period from 1919 to 1939 is given in Exhibit 1208.¹⁰ The prices to the consumers have been lowered more than the cost of living and more than wholesale prices generally. Table 9¹¹ gives comparative indexes of the United States retail prices of gasoline, foods, clothing, housing, fuel and light, and sundries for the period 1920-38. From 1928 to 1938, the retail price of gasoline (exclusive of tax) declined over 21 percent, while the cost of living, according to

⁶ Figures for the intervening years are given in table 7, p. 72, *infra*, along with motor vehicle registrations and domestic production of crude oil.

⁷ See p. 72, *infra*.

⁸ Petroleum is one of the most heavily taxed industries. According to Mr. J. Howard Pew's testimony, the petroleum industry's contribution to public revenues was about \$1,000,000,000 yearly (Temporary National Economic Committee hearings, pt. 14, p. 7175). For some comparative figures of taxes as percentages of sales, see Temporary National Economic Committee Monograph No. 9, *Taxation of Corporate Enterprise*, especially pp. 103-104.

⁹ *Petroleum Facts and Figures*, fifth ed., 1937, p. 162; sixth ed., 1939, p. 118.

¹⁰ TNEC Hearings, pt. 15, p. 8716.

¹¹ See p. 73 *infra*.

the National Industrial Conference Board index, declined slightly more than 14 percent. Prices of petroleum products have declined more than wholesale prices generally and more than any of the major groups of commodities included in the indexes of the United States Bureau of Labor Statistics, which use 1926 as the base year.¹² From 1928 to 1938, the wholesale index of petroleum products declined from 72.0 to 55.9 while the "all commodities" index declined from 96.7 to 78.6; in percentage terms, the decline of petroleum products was over 22 and the decline of all commodities was less than 19.

These reductions in price have not been made at the expense of the labor employed by the industry; on the contrary, the industry's employees have been paid good wages and have had their hours of labor reduced. Employment through the year has been stable, labor turnover is low, accidents have been reduced, and the industry has had little labor strife. In all these important aspects, the industry's achievements put it in the front rank of American industries. The detailed evidence of the industry's accomplishments with regard to its employees can be found in the testimony of H. H. Anderson, vice president, Shell Oil Co., Inc., before the T. N. E. C.¹³ The record was so convincing that it called forth the comment from Dr. Isador Lubin, Commissioner of Labor Statistics, who represented the Department of Labor on the T. N. E. C.: The conclusion is self-evident, that the labor conditions in the industry are very, very good.¹⁴

In view of all these accomplishments, the industry's rewards to capital have certainly not been excessive. Figures on investment and income are not available for the entire industry, but the T. N. E. C. record has figures for some of the larger companies. Mr. John D. Gill, vice president, Atlantic Refining Co., presented to the T. N. E. C. a chart which compared the earnings of 24 oil companies and 400 industrials and which showed that the rate of return of the oil companies was below that of the 400 industrials in every year save one.¹⁵ Standard Statistics was quoted in the T. N. E. C. record as saying that "the stockholders' cash return on the aggregated invested capital of 21 leading oil companies for which comparable data are available averaged about 4 percent a year for the 15-year period 1922-37. Returns for 135 leading industrial corporations for the same period averaged better than 5 percent."¹⁶ Mr. Cook admits that the earnings of the majors for the years 1924 to 1938 averaged 8.9 percent on the par or stated value of the common stock, or 5.6 percent on the book value of the common stock.¹⁷ Modest though the earnings have been, they have sufficed to bring additional capital into the industry to finance its great expansion.

The success of the petroleum industry, when judged by the standards used in the discussion thus far, has not been obtained through any suppression of competitive opportunity. On the contrary, the industry must be judged successful when the standard used is that of freedom for efficient competitors to enter into and remain in the field.

¹² Petroleum Facts and Figures, sixth ed., 1939, p. 123.

¹³ Temporary National Economic Committee Hearings, pt. 16, pp. 8987-9022; pp. 9245-9304.

¹⁴ Ibid., p. 9006.

¹⁵ Ibid., pt. 14, pp. 7154, 7505.

¹⁶ Ibid., pt. 14-A, p. 7706.

¹⁷ Monograph 39, p. 6. His statement is based on his table 4, p. 61, which is taken from the Temporary National Economic Committee Hearings, pt. 14-A, table 47, p. 7863.

Mr. Cook would deny this; but this whole reply to his assertions and arguments is essentially a refutation of such a denial. Details of the refutation need not be repeated here. In exploration, drilling, production, refining, transportation, jobbing, and retailing, there is abundant evidence that the competitive field is open and that the number of independent competitors is increasing.

Thanks to the vigorous competition in the petroleum industry which is so amply shown in the T. N. E. C. testimony and in which so many enterprises take part, the industry can point to a long list of great achievements. No well-informed person would claim that all the achievements can be credited to the major companies. The independents contributed their share; so also have the research agencies of universities and technical schools and of governments. The State conservation commissions, the Interstate Commerce Commission, the Department of Commerce, the Department of the Interior, the Department of Justice, and the Federal Trade Commission have all made their contributions to the success of the industry. The oil industry has been aided also by the automobile industry, another great and progressive American industry. No one will deny that the vigorous competition in the industry has led to friction and complaints, although some of the complaints contradict one another and many others are voiced only by very small minorities. But the complaints which arise from competition in the oil industry have to be appraised in the light of the other results of competition. Mr. Cook failed to make such an appraisal.

Mr. Cook's whole appraisal of the petroleum industry stands in marked contrast with that presented in another T. N. E. C. monograph by Dr. Theodore J. Kreps, the economic adviser to the T. N. E. C. In his Monograph No. 7, Measurement of the Social Performance of Business, Dr. Kreps gives petroleum refining either third or fifth rank among the 22 industries he studied, depending on the standards applied.¹⁸

The achievements of the oil industry are not the sort of things the American public expects of group monopoly. They are, in fact, not the results of monopoly. They are the results of vigorous competition in which both majors and independents take part and in which efficient business units of either sort can survive and prosper.

¹⁸ Pp. 44-45.

TABLE 1.—Domestic marketing territory of 20 major oil companies, by States,
May 1939

State	Atlantic Refining Co.	Cities Service Co.	Consolidated Oil Corporation	Continental Oil Co.	Gulf Oil Corporation of Pennsylvania	Mid-Continent Petroleum Corporation	The Ohio Oil Co.	Phillips Petroleum Co.	The Pure Oil Co.	Shell Union Oil Corporation	Skelly Oil Co.	Socony-Vacuum Oil Co.	Standard Oil Co. of California	Standard Oil Co. (Indiana)	Standard Oil Co. (New Jersey)	Standard Oil Co. (Ohio)	Sun Oil Co.	The Texas Corporation	Tide Water Associated Oil Co.	Union Oil Co. of California.	Total
Alabama		X	X		X				X	X								X			7
Arizona				X	X					X		X						X			7
Arkansas		X	X	X	X	X		X	X	X	X	X	X					X			11
California										X			X					X			6
Colorado		X	X	X	X	X				X								X			9
Connecticut	X	X	X	X	X			X		X	X	X	X	X				X			13
Delaware	X	X	X	X	X				X	X	X	X	X	X	X			X			13
District of Columbia										X		X			X			X			9
Florida	X	X	X	X	X				X	X	X	X	X	X	X		X	X			10
Georgia	X	X	X	X	X				X	X	X	X	X	X	X		X	X			9
Idaho				X	X					X		X	X					X		X	9
Illinois		X	X	X	X	X	X	X	X	X	X	X	X	X				X			14
Indiana		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X			16
Iowa		X	X	X	X	X	X	X	X	X	X	X	X	X				X			13
Kansas		X	X	X	X	X	X	X	X	X	X	X	X	X				X			12
Kentucky		X	X	X	X	X	X	X	X	X	X						X	X			10
Louisiana		X	X	X	X	X	X	X	X	X	X			X	X		X	X			9
Maine		X	X	X	X				X	X		X	X	X	X		X	X	X		10
Maryland	X	X	X	X	X				X	X		X	X	X	X		X	X	X		14
Massachusetts	X	X	X	X	X				X	X	X	X	X	X	X		X	X	X		12
Michigan		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		16
Minnesota		X	X	X	X	X		X	X	X	X	X					X	X	X		12
Mississippi		X	X	X	X				X	X	X	X	X	X			X	X	X		7
Missouri		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		12
Montana						X	X	X	X	X	X	X	X	X				X	X		8
Nebraska		X	X	X		X		X	X	X	X	X	X					X	X		11
Nevada										X		X	X					X	X	X	6
New Hampshire	X	X	X		X				X	X		X	X	X	X		X	X	X		11
New Jersey	X	X			X				X	X	X	X	X	X	X		X	X	X		13
New Mexico			X	X	X			X		X	X	X	X					X	X		7
New York		X	X	X	X				X	X		X	X	X	X		X	X	X		13
North Carolina		X	X	X	X				X	X		X	X	X	X			X	X		11
North Dakota		X	X	X	X	X		X	X	X	X	X	X	X			X	X	X		11
Ohio	X	X	X	X	X		X	X	X	X	X	X				X	X	X			14
Oklahoma		X	X	X		X	X	X	X	X	X		X	X				X	X		12
Oregon				X						X		X	X					X	X	X	7
Pennsylvania	X	X	X	X	X				X	X		X	X	X	X	X	X	X	X		14
Rhode Island		X	X	X	X				X	X		X	X	X	X			X	X		11
South Carolina	X	X	X	X	X				X	X	X	X	X	X	X			X	X		11
South Dakota		X	X	X	X	X		X	X	X	X	X	X	X				X	X		12
Tennessee		X	X	X	X	X		X	X	X	X	X	X	X	X			X	X		11
Texas		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X		13
Utah			X	X	X					X		X	X	X	X			X	X		8
Vermont	X	X	X	X	X				X	X		X	X	X	X		X	X	X		13
Virginia	X	X	X	X	X				X	X		X	X	X	X		X	X	X		13
Washington				X					X	X		X	X					X	X	X	7
West Virginia	X	X	X	X	X				X	X		X	X	X	X	X	X	X	X		13
Wisconsin		X	X	X		X		X	X	X	X	X	X	X				X	X		12
Wyoming			X	X		X		X		X	X	X	X					X			9
Total	17	38	43	38	28	19	10	21	31	47	17	39	9	38	20	6	20	49	33	6	529

Source: Temporary National Economic Committee Hearings, pt. 14-A, table 37, pp. 7812-7813.

TABLE 2.—*Summary statistics of pipe-line companies reporting to Interstate Commerce Commission, 1929-37*

Year	Number of companies	Total investment	Operating revenue	Operating expenses	Net income	Percent income is of investment	Number of miles			Total number, employees	Total compensation	Average annual compensation
							Total	Trunk	Gathering			
		<i>Thous. of dol.</i>	<i>Thous. of dol.</i>	<i>Thous. of dol.</i>	<i>Thous. of dol.</i>						<i>Thous. of dol.</i>	
1937.....	1 58	890,334	248,645	99,641	102,796	11.5	96,612	56,811	39,801	24,168	45,054	\$1,864
1936.....	52	850,981	219,057	92,899	91,742	10.8	94,060	54,460	39,600			
1935.....	53	882,080	177,368	89,364	78,249	8.9	92,037	52,657	39,380	21,515	34,670	1,611
1934.....	53	815,447	199,166	86,884	84,143	10.3	93,070	53,405	39,665	20,853	32,462	1,557
1933.....	49	814,198	217,192	85,374	105,943	13.0	93,724	52,865	40,859	18,884	27,880	1,476
1932.....	49	805,696	211,789	86,003	112,362	13.9	92,782	51,404	41,378	16,291	28,184	1,730
1931.....	51	935,555	222,944	96,237	120,738	12.9	93,090	51,287	41,803	19,854	36,447	1,836
1930.....	40	868,595	237,910	99,364	123,741	14.2	88,728	45,922	42,806	21,948	40,473	1,844
1929.....	37	845,455	251,411	102,101	142,216	16.8	85,796	-----	-----	23,457	46,251	1,972

¹ As of Dec. 31 of the year indicated.

Source: Temporary National Economic Committee Hearings, pt. 14-A, table 17c, p. 7792.

TABLE 3.—*Estimates of petroleum reserves in the United States*

[Millions of barrels]

Year of estimate	Quantity estimated	Estimating authority
1914.....	6,000	Ralph Arnold.
1915.....	7,500	U. S. Geological Survey.
1921.....	9,000	U. S. Geological Survey and American Association of Petroleum Geologists.
1924.....	13,250	U. S. Geological Survey.
1925.....	5,000	American Petroleum Institute.
1926.....	4,500	Federal Oil Conservation Board.
1932.....	10,000	Do.
1933.....	12,000	V. R. Garfias, of H. L. Doherty Co.
1934.....	10,638	Petroleum Administrative Board.
1934.....	13,250	U. S. Geological Survey.
1935.....	10,763	Petroleum Administrative Board.
1935.....	12,177	American Petroleum Institute.
1936.....	10,575	V. R. Garfias and R. V. Whetsel.
1936.....	12,992	Baker (Oil Weekly).
1936.....	12,400	"The Lamp," Standard Oil Co. (N. J.).
1937.....	12,904	Oil and Gas Journal.
1937.....	15,507	American Petroleum Institute.
1937.....	15,000	J. Elmer Thomas, American Association of Petroleum Geologists.
1938.....	15,856	American Petroleum Institute.
1938.....	12,909	A. McCoy (Oil Weekly).
1938.....	13,976	Oil and Gas Journal.
1939.....	14,352	Do.
1939.....	17,505	H. C. Weiss, Humble Oil & Refining Co.

¹ January 1 of the year indicated.

Source: Temporary National Economic Committee Hearings, pt. 14-A, table 3b, p. 7772.

TABLE 4.—*Deepest tests and deepest producing wells, by years*

[Feet]

Year	Deepest drilled depth	Deepest producing depth	Year	Deepest drilled depth	Deepest producing depth
1938.....	15,004	13,206	1928.....	8,523	8,523
1937.....	12,786	11,302	1927.....	8,046	7,591
1936.....	12,786	9,950	1926 ¹	8,046	7,591
1935.....	12,786	9,836	1925.....	-----	7,591
1934.....	11,377	9,710	1924.....	7,319	-----
1933.....	10,585	9,710	1909.....	5,660	-----
1932.....	10,585	9,710	1900.....	2,800	-----
1931.....	10,585	8,823	1895.....	1,200	-----
1930.....	9,753	8,550	1859.....	-----	694
1929.....	9,280	8,523			

¹ Data prior to 1926 from records believed to be approximately correct.

Source: Petroleum Facts and Figures, 6th ed., 1939, p. 68, which gives as its authority the Oil Weekly.

TABLE 5.—Total gasoline production from refineries in the United States, 1918-38

Year	Crude oil processed (thousands of barrels)	Gasoline from crude oil straight run plus cracked (thousands of barrels)	Percent gasoline production from crude oil	Natural gasoline blended at refinery (thousands of barrels)	Total gasoline from refinery (thousands of barrels)	Percent annual increase in total gasoline from refineries
1938	1,165,015	515,889	44.28	39,961	555,850	-0.59
1937	1,133,440	519,760	43.92	39,381	559,141	10.8
1936	1,068,570	470,994	44.08	33,817	504,811	10.2
1935	965,790	426,817	44.19	31,025	457,842	9.8
1934	895,636	388,770	43.41	28,162	416,932	3.8
1933	861,254	376,245	43.69	25,346	401,591	2.3
1932	819,997	366,291	44.67	26,332	392,623	-9.0
1931	894,608	396,394	44.31	35,116	431,510	-1.17
1930	927,447	389,071	41.95	43,170	432,241	-1.65
1929	987,708	388,621	39.35	46,457	435,078	15.4
1928	913,295	341,722	37.42	35,223	376,945	14.1
1927	828,835	298,273	35.99	32,162	330,435	10.2
1926	779,264	272,038	34.91	27,696	299,734	15.5
1925	739,920	239,965	32.43	19,636	259,601	30.5
1924	643,719	200,655	31.17	14,746	215,401	18.9
1923	581,238	174,416	30.01	6,687	181,103	22.6
1922	500,706	144,010	28.76	3,662	147,672	20.3
1921	443,363	120,187	27.11	2,517	122,704	5.6
1920	433,915	113,098	26.06	3,153	116,251	23.4
1919	361,520	91,278	25.25	2,957	94,235	10.9
1918	326,025	82,556	25.32	2,451	85,007	

Source: Temporary National Economic Committee Hearings, pt. 15, table 1, p. 8648.

TABLE 6.—Conservation of crude oil through operation of cracking processes

Year	Actual yield of straight-run gasoline from crude oil (percent)	Total quantity of gasoline produced from crude oil, including cracked gasoline (thousands of barrels)	Actual quantity of crude oil run to stills (thousands of barrels)	Quantity of crude oil which would have been required without cracking (thousands of barrels)	Quantity of crude oil conserved by cracking (difference between columns 4 and 3) (thousands of barrels)	Crude oil conserved by cracking (percent)
	(1)	(2)	(3)	(4)	(5)	(6)
1938	21.07	515,889	1,165,015	2,448,452	1,283,437	52.42
1937	21.26	519,760	1,183,440	2,444,779	1,261,339	51.59
1936	21.65	470,994	1,068,570	2,175,492	1,106,922	50.89
1935	22.70	426,817	965,790	1,880,251	914,461	48.64
1934	23.04	388,770	895,636	1,687,370	791,734	46.92
1933	22.71	376,245	861,254	1,656,737	795,483	48.02
1932	23.83	366,291	819,997	1,537,100	717,103	46.65
1931	24.59	396,394	894,608	1,612,013	717,405	44.50
1930	24.22	389,071	927,447	1,606,404	678,957	42.27
1929	24.79	388,621	987,708	1,567,652	579,944	36.99
1928	24.00	341,722	913,295	1,423,842	510,547	35.86
1927	22.77	298,273	828,835	1,254,830	425,995	33.95
1926	22.88	272,038	779,264	1,188,977	409,713	34.46
1925	23.16	239,965	739,920	1,036,118	296,198	28.59
1924	23.40	200,655	643,719	857,500	213,781	24.93
1923	23.13	174,416	581,238	754,068	172,830	22.92
1922	22.77	144,010	500,706	632,455	131,749	20.83
1921	22.60	120,187	443,363	531,801	88,438	16.63
1920	22.61	113,098	433,915	500,212	66,297	13.25

Source: Temporary National Economic Committee Hearings, pt. 15, table 2, p. 8648.

TABLE 7.—*Gasoline consumption, domestic crude oil production, and motor-vehicle registrations, by years, 1900-38*

Year	Gasoline consumption ¹	Motor vehicle registrations	Domestic production of crude oil ¹	Year	Gasoline consumption ¹	Motor vehicle registrations	Domestic production of crude oil ¹
1938	521,657	29,485,680	1,213,000	1918	79,949	6,146,617	335,928
1937	518,760	29,705,200	1,279,000	1917	(?)	4,983,000	335,316
1936	481,606	28,165,550	1,088,516	1916		3,513,000	300,767
1935	434,810	26,230,834	996,596	1915		2,446,000	281,104
1934	410,339	24,951,662	908,065	1914		1,711,000	265,763
1933	380,494	23,843,591	905,656	1913		1,258,000	248,446
1932	377,791	24,115,129	785,159	1912		944,000	222,935
1931	407,843	25,832,884	851,081	1911		640,000	220,449
1930	397,609	26,545,281	898,011	1910		469,000	209,557
1929	382,878	26,501,443	1,007,323	1909		312,000	183,171
1928	338,881	24,493,124	901,474	1908		198,000	178,527
1927	305,367	23,133,243	901,129	1907		142,000	166,095
1926	268,128	22,001,393	770,874	1906		107,000	126,494
1925	232,745	19,937,274	763,743	1905		78,000	134,717
1924	196,586	17,595,373	713,940	1904		55,000	117,081
1923	175,088	15,092,177	732,407	1903		32,920	100,461
1922	137,770	12,238,375	557,531	1902		23,000	88,767
1921	116,840	10,463,295	472,183	1901		14,000	69,389
1920	108,948	9,231,941	442,929	1900		8,000	63,621
1919	88,648	7,565,446	378,367				

¹ Unit is thousands of barrels.² Authoritative figures prior to 1918 are not available.

Source: Temporary National Economic Committee Hearings, pt. 14-A, table 2, p. 7771.

TABLE 8.—*Changes in the volatility and antiknock quality of gasoline produced in the United States*

Year	Volatility as Fahrenheit temperature at which the indicated percentages distilled			Anti-knock quality octane number	Year	Volatility as Fahrenheit temperature at which the indicated percentages distilled			Anti-knock quality octane number
	10 percent	50 percent	90 percent			10 percent	50 percent	90 percent	
1938	138	243	351	69.9	1926	159	265	381	
1937	139	244	353	69.1	1925	165	271	384	
1936	140	244	353	68.7	1924	166	269	386	
1935	139	254	366	65.4	1923	173	268	379	1 50
1930	144	258	369	64.9	1922	172	269	376	1 50
1929	151	263	379		1921	173	261	377	1 50
1928	151	263	379		1920	187	265	379	1 50
1927	154	266	382		1919		261	361	1 50

¹ Octane number estimated.

NOTE.—All figures except the estimated octane numbers are from Bureau of Mines publications. Figures for the years 1920 to 1930, inclusive, and for 1936 and 1937 are unweighted averages for sets of samples obtained in winter and summer. The 1931 figures are for winter samples only.

The 1936, 1937, and 1938 series of samples differentiated between samples representing grade designated as "Premium," "Regular," and "Third grade." Weighted averages were computed on the basis of the assumption that the total volume of gasoline represented was 7.5 percent premium, 80 percent regular, and 12.5 percent third grade.

Source: Temporary National Economic Committee Hearings, pt. 15, table 11, p. 8655.

TABLE 9.—*Indexes of United States retail prices, gasoline compared with other essentials*

[1923=100]

Year	Gasoline service station (exclusive of tax)	Foods	Clothing	Housing	Fuel and light	Sund-
1938	66.8	80.9	74.7	87.1	85.0	97.4
1937	69.2	86.9	76.9	86.5	85.2	96.9
1936	67.0	83.9	73.8	77.9	86.0	94.6
1935	64.3	82.1	75.0	70.3	85.7	93.8
1934	64.7	75.3	77.5	64.8	86.9	93.2
1933	58.8	67.8	67.6	63.8	85.2	91.4
1932	63.2	69.7	66.5	72.4	86.9	93.6
1931	61.7	83.7	79.5	82.4	90.5	96.6
1930	76.7	101.7	92.0	89.5	92.7	98.7
1929	85.0	106.9	98.7	92.0	93.4	99.7
1928	84.9	105.6	101.2	93.7	93.8	100.7
1927	86.7	107.0	100.5	97.8	95.1	101.2
1926	99.5	110.6	102.5	101.3	95.3	101.4
1925	95.3	107.2	102.5	104.1	94.1	101.7
1924	92.4	99.1	102.8	106.3	94.3	101.0
1923	100.0	100.0	100.0	100.0	100.0	100.0
1922	117.8	96.8	91.4	95.9	99.7	101.0
1921	123.9	103.5	97.6	97.7	101.8	105.8
1920	141.0	136.2	153.4	89.2	96.9	107.2

Source: Petroleum Facts and Figures, Sixth Edition, 1939, p. 119, which gives as its authority: "National Industrial Conference Board, all indexes except gasoline; gasoline index, American Petroleum Institute."

SECTION II

REJOINDER BY ROY C. COOK, AUTHOR
OF MONOGRAPH NO. 39



LETTER OF TRANSMITTAL

WASHINGTON, D. C., *June 30, 1941.*

HON. JOSEPH C. O'MAHONEY,

*Chairman, Temporary National Economic Committee,
Washington, D. C.*

DEAR SENATOR O'MAHONEY: I was advised by you in May that Messrs. William S. Farish and J. Howard Pew had sponsored and supervised the writing of a criticism on Monograph No. 39 in the form of a reply and had requested that it be printed under congressional authority. The nature and extent of the comments contained in the reply necessitate a rejoinder. Accordingly, I have prepared a rejoinder to this reply, which I am transmitting herewith.

Sincerely yours,

ROY C. COOK.

REJOINDER BY ROY C. COOK, AUTHOR OF MONOGRAPH NO. 39

GENERAL COMMENTS

The introduction to the reply to T. N. E. C. Monograph No. 39, "Control of the Petroleum Industry by Major Oil Companies," begins by offering some reasons on why a reply was made. Chief among these is the fact that the monograph was printed by the Government Printing Office and was prepared by me in my individual capacity. The authors of the reply emphasize that "like the other monographs" the one I prepared had neither the approval nor disapproval in whole or in part of the members of the Temporary National Economic Committee. The purpose of this emphasis is not very clear, but I do not feel that the reply needs such an excuse. The fact that a publication is written by a single individual, or by a staff of individuals, should not serve as the basis of its evaluation; it should stand on its merits. However, it is to be noted that my critics apparently soon forget their emphasis of the fact that T. N. E. C. monographs were not officially approved or disapproved by the committee, since they proceed in the early part of their reply to quote from other T. N. E. C. monographs.

A considerable part of the reply is devoted to comments and analyses of premises not raised in the monograph. A complete chapter is given to a general discussion of "The Achievements of the Petroleum Industry." Most of the quotations used in the reply are from witnesses appearing before the T. N. E. C. under the sponsorship of the American Petroleum Institute.¹ In most cases the comments represent the personal views of the writers concerning the problems of control by the majors over independents, rather than a criticism of my own analysis. The reply does not offer any proof of inaccuracy of the basic considerations I advanced to show the control of the petroleum by the majors. The contention that "no independent wishes for himself to become a part of a public utility," as stated on page 4, is no denial of my conclusion that the continuance of present practices and conditions in the petroleum industry may lead to its regulation on public utility principles.

I shall now discuss briefly the more important factors and points discussed in the reply as it deals with the chapters: Basic Factors, Production, Crude Oil Transportation, Refining, and Marketing. No comments were made on my chapter on Gasoline Transportation. Since the reply so far as its recital "The Achievements of the Petroleum Industry" is concerned does not appear to be a reply to the monograph, no comments are here made on it.

The reply claims that "many companies, large and small, are now in vigorous competition with one another," and offers the explanation that the majors compete "to locate new oil fields," and in the search for economies in refining and transporting gasoline. Since the majors have virtual control over transportation and refining facilities, as was

¹ See Temporary National Economic Committee Hearings, pt. 14, pp. 7163-7164, for a list of witnesses. They were J. Howard Dewar, E. DeGolyer, Robert E. Wilson, Fayette D. Dow, Sidney A. Swensrud, John D. Gill, H. H. Anderson, and William S. Farish.

developed in the monograph, there is no evidence of any real competition between the majors and independents. On the question of competition in the oil industry, Prof. John B. Ise, of the University of Kansas, gave the following testimony:

It may be noted, finally, that competition between the major integrated companies, on the one hand, and independent producers or refiners, on the other, is not such as would be found in a genuinely competitive market. In a sense, the integrated companies and the independents are in different businesses. The integrated companies are in the business of taking oil from the ground, or perhaps I might say in the businesses of taking oil from the ground, transporting and refining it, and selling refined products to ultimate consumers; independent refiners without production are in the business of buying crude oil from producers, refining it, and selling their products to jobbers or marketers. To some extent the two groups are in different businesses, and do not compete on even terms. The independent refiners must make their profits on refining operations or not at all; integrated companies might suffer losses on their refining operations and yet make fair profits on their business as a whole, by recouping their refining losses in other operations. The significance of this may be seen in the present marketing situation. The marketing of oil products is apparently carried on at a heavy loss, which for independent marketers is a serious matter; but the high earnings of the integrated companies in other operations make up for their losses in marketing.

The oil industry, in conclusion, carries some of the earmarks of a public utility. The pipe lines are recognized as common carriers, and other monopoly elements in the industrial pattern of the oil industry emphasize its divergence from the forms of private competitive business.²

The allegation on page 5 of reply that the T. N. E. C. did not reveal any evidence of a conspiracy is misleading and inaccurate. I referred to some of them on pages 34, 35, 42, 45, and 47 of the monograph. A Supreme Court decision of 1940 (310 U. S. 150), involving a large number of the majors, gives some interesting facts about an oil conspiracy that was held to be illegal. The complaint (No. 8524) filed by the Attorney General in September 1940 against the American Petroleum Institute and the major oil companies alleges over 30 unlawful agreements and combinations entered into by the defendants pursuant to conspiracy. While the T. N. E. C. Hearings were primarily a part of an investigation with respect to the concentration of economic and financial power, the authors of the reply may wish to argue that neither the J. J. Pelley memorandum³ nor the oil tanker pool arrangement⁴ of 1932 were evidence of conspiracies.

On page 6, it is asserted that I "offer no explanation of the bald assertion that assets do not measure control." I pointed out that the real measure of control per se is not in the major's share of total assets, but in their position of control in the different branches of the industry. A good example of this is found by considering the proportion of oil acreage leased as against the quantity owned in fee. The majors leased 93.9 percent of the acreage of oil lands held by them on December 31, 1938.⁵ They have under lease and fee interest over

² Temporary National Economic Committee Hearings, pt. 14, p. 7107.

³ See Temporary National Economic Committee Hearings, pt. 15, pp. 8315-8323; see also pt. 16, pp. 9090-9125.

⁴ See Temporary National Economic Committee Hearings, pt. 14, p. 7574. Mr. Louis J. Walsh, vice president, Eastern States Petroleum Co., Inc., testified as follows on the purpose of the oil tanker pool: "A number of the independent oil companies, including our own, objected to this proposed agreement and asked an investigation by the Attorney General in the fall of 1932. As a result of this investigation the plan, which most certainly was illegal, and most certainly was designed to produce monopoly, was dropped. The Attorney General's office is fully conversant with the facts in this case, and we feel certain would confirm to you that the plan proposed was obviously designed to produce monopoly." It is true as stated on p. 38 of the reply that the pool was not put into effect, but this fact does not mean it was not a conspiracy. The fact that agreements were not carried out or accomplished is immaterial in determining whether a conspiracy existed, according to the opinion of Justice Stone in *U. S. v. Trenton Pottery Co.*, 273 U. S. 394, 402 (1927).

⁵ Temporary National Economic Committee Monograph No. 39, p. 64.

70 percent of the proven crude oil reserves of the United States.⁶ A summary of the major's share of control was given on page 5 of the monograph, based on public sources of information.

Some reliance seems to be placed by the reply on the figures given by Dr. Willard Thorp in Monograph No. 27 as controverting my conclusions with respect to concentration of control. I have no reason to question the accuracy of Dr. Thorp's figures on concentration as quoted on page 7 or to place any interpretation upon them other than that contained in the reply, but they deal for the most part with non-integrated, manufacturing industries. The fact that four companies have 20 percent of the output of oil wells, as pointed out by Dr. Thorp, is certainly not an adequate measure of concentration in the petroleum industry. The reply fails to inform the reader that Dr. Thorp also made analyses of control based on 20 major integrated oil companies.⁷ Consideration must be given to the fact that the fully integrated major oil companies are engaged in production, transportation, refining, and marketing, and, relatively speaking, they are unusually large corporations, owning 440 subsidiary and jointly owned companies as was pointed out in my chapter on "Basic Factors." The smallest major considered is fully integrated and has assets of over \$62,000,000.

For some reason satisfactory to him, Dr. Joseph E. Pogue, economist of the Chase National Bank of the City of New York, in his study entitled "Economics of the Petroleum Industry"⁸ used 20 companies in his analysis of the degree of concentration of production and refining. His percentages on control differ only slightly from mine.

Mr. John E. Shatford in his testimony before the T. N. E. C. (pt. 15, p. 8518) gave an accurate description of the concentration of control when he stated:

At one time the activities of this business were conducted in four relatively separate branches or divisions, but to a very large extent this is no longer true. Today these activities have become so inter-dependent in operation, and the boundaries which once divided them have become so rubbed out by common ownerships that more than 85 percent of the business of this twelve to fourteen billion dollar industry, comprising several thousand separate ownerships, is carried on by 20 widespread integrated companies known as the major group.

In considering whether or not a few companies should be used to measure control, it is fair to remind the reader that the old Standard Oil Co. was divided into separate companies whose operations were allocated to different areas of the United States and, generally speaking, each of the Standard companies is today the dominant factor in each of the 11 marketing areas. The effect of division of territory should certainly be considered in any picture of concentration, especially with reference to the number of companies to be included.

Likewise, the study "Big Business: Its Growth and Its Place," quoted in an attempt to show that the degree of concentration is comparatively low, is irrelevant. I do not accept wage earners in the refining division as being the measure of concentration for a group of major integrated oil companies. The wage earners in the refining or manufacturing division represent only 13 percent of the petroleum industry total, as was given in table 1 on page 1 of the monograph.

⁶ Ibid., p. 10.

⁷ Temporary National Economic Committee Monograph No. 27, "The Structure of Industry," p. 261.

⁸ Temporary National Economic Committee Hearings, pt. 14, p. 7458.

Moreover, it is significant that the 17 largest industrial corporations in terms of their total assets on December 31, 1939, included 9 oil corporations, representing over 50 percent of the assets. The majors are unique in that respect.

The statistical tables and charts included in the text and appendix of the monograph contain individual company figures so that one can make comparisons of any group of major companies. Thus, on page 27 it is shown that two majors have 36 percent of the oil tankers and on page 83, four majors have over 50 percent of the crude-oil pipe-line mileage. Some consideration must also be given to the fact that the petroleum industry⁹ is a comparatively large one and is composed of many thousands of individuals and small companies outside the major group. Furthermore, Standard Oil Co. (New Jersey), the largest major, has total assets of over \$2,000,000,000. Compared to this, the Federal Trade Commission found that—

The entire investment of the Standard Oil combination as represented by the investment of the holding company, Standard Oil Co. (New Jersey), on December 31, 1906, soon after the Standard Oil dissolution suit was brought, was \$359,400,193.31.¹⁰

The Securities and Exchange Commission in their study, "The Distribution of Ownership in the 200 Largest Nonfinancial Corporations," T. N. E. C. Monograph No. 29 (p. 126), found in reference to the Rockefeller family influence in the oil industry that—

The aggregate assets of the five corporations regarded as under control of the Rockefeller family amounted to nearly \$4,500,000,000 or 6½ percent of the total assets of the 200 corporations and nearly 3 percent of those of all nonfinancial corporations. The Rockefeller interests thus ranked first in total assets.

From an industrial point of view the Rockefeller empire is the most compact of the three, practically all the investments of the family among the 200 corporations being in the oil industry and almost all of them going back to the old Standard Oil Co. dissolved in 1911, of which John D. Rockefeller, Sr., was the largest stockholder.

It is said on page 7 that I selected the largest 20 companies "at the present time," causing the percentages of control to be biased, and the argument is made that "the only appropriate method is to compare the percentage controlled by the leaders in each year, irrespective of which companies are among the leaders." This comment is not based on an analysis of the 20 largest companies in 1926 or any other year but is based on percentages of control for the "four largest refiners" in each of several selected years. Obviously the four largest refiners' percentages of daily crude oil refining capacity is not the same as comparing the four largest integrated majors in terms of their total assets and control of the industry. It is admitted that there have been some changes in relative positions of the majors within the group since 1926, but this does not affect the total percentages of control. According to Poor's and Moody's Industrials, Sun Oil Co. and The Standard Oil Co. (Ohio) were not included in the 20 largest integrated companies in 1926, but two large companies, Vacuum Oil Co. and Prairie Oil & Gas Co., with combined assets of \$310,000,000, were included in the 20 largest. The latter two companies were absorbed by two majors, Standard Oil Co. of New York, and Consolidated Oil Corporation since 1926, which would certainly not indicate decreasing concentration. In

⁹ \$15,000,000,000 is the recognized investment figure; see p. 57 of the monograph for investment in other years.

¹⁰ Federal Trade Commission, Petroleum Industry: "Prices, Profits, and Competition" (S. Doc. No. 61, 70th Cong., 1st sess.), p. 60.

view of these considerations, I feel the implication that the 20 major companies today are not the same as in 1926 is not a valid one. It is certainly true in measuring the trend of concentration that one should consider acquisitions and mergers.

The discussion on pages 10 and 11 on the dissimilarities of the major companies represents an attempt to confuse the issue. I did not state or imply that the companies have similar policies with respect to stocks of crude oil, capital employed, sources of crude oil and gasoline, amount of sales to jobbers, extent to which earnings are paid out, etc., as was implied on pages 10 and 11 of the reply. However, their policies toward the adoption of uniform contracts with jobbers and differentials between "split" and "100 percent" dealers may be considered as some of the identical business policies toward independents. Others were discussed in the monograph.

I did not state in the monograph that the "monopoly position" of the majors was weakest in the production division; neither did I infer that the measure of the majors' control of this division was in the fact that they have 23.7 percent of the producing oil wells and 52.5 percent of the crude oil production. As I pointed out on page 4 of the monograph, the majors purchase approximately one-third of their requirements of crude oil in a buyers market, owing to their control of crude oil pipe line. The practical effect of this control is that in virtually all cases the only alternative available to the oil producer is to sell his oil in the field to the particular pipe line company.

The attempt is made to limit my argument to company-owned stations. It is very true that the percentage of major-owned stations is comparatively small, but the percentage of stations controlled by the majors is 85 percent, according to a study made for the Temporary National Economic Committee in 1939.¹¹

Though my argument on marketing losses is condemned as extremely weak, it is not denied that on the whole the marketing division is operated at a loss. The majors' own figures¹² submitted to T. N. E. C. show that most companies carry on their marketing operations at a loss. Mr. W. S. Farish, president of Standard Oil Co. (New Jersey) and one of the sponsors of the reply, himself submitted to the T. N. E. C. the following table¹³ which gives an interesting record of profits and losses of the marketing departments of four important subsidiaries of Standard Oil Co. (New Jersey).

	Standard Oil Co. of New Jersey	Standard Oil Co. of Louisiana	Standard Oil Co. of Penn- sylvania	Colonial Beacon Oil Co.	Total
1928.....	\$9,862,480	\$1,115,424	(1)	(2)	\$10,977,904
1929.....	8,641,895	1,188,348	³ \$680,597	(2)	6,772,949
1930.....	3,451,540	³ 4,217,994	³ 819,041	³ \$2,133,657	³ 3,719,062
1931.....	6,532,242	³ 1,741,914	³ 361,073	³ 860,804	568,450
1932.....	3,734,114	³ 3,199,716	³ 380,251	³ 1,668,092	³ 1,513,915
1933.....	967,607	³ 2,609,879	³ 1,771,147	³ 2,415,747	³ 5,829,166
1934.....	3,190,274	³ 2,261,990	³ 1,138,686	³ 2,547,762	³ 2,758,164
1935.....	4,310,688	³ 1,726,350	³ 330,197	³ 3,068,376	³ 1,541,268
1936.....	3,583,654	³ 342,800	³ 284,000	³ 3,191,600	450,854
1937.....	3,221,410	³ 662,000	³ 967,200	³ 974,800	1,941,410

¹ Organized June 29, 1928. Departmental earnings not available.

² Not available.

³ Loss.

¹¹ Hearings, pt. 15-A., p. 8735.

¹² See Temporary National Economic Committee Hearings, pt. 17-A, pp. 10040-10060; also pt. 16, p. 9155 for a summary of net profits and losses 1927-29 and 1931-34 made by Mr. Paul Ryan.

¹³ Temporary National Economic Committee Hearings, pt. 17, p. 9726. During the same period the annual reports to stockholders for Standard Oil Co. (New Jersey) shows profits for every year.

Again, Mr. J. Howard Pew, joint sponsor with Mr. Farish of the reply, in his discussion before the Temporary National Economic Committee of the 117 completely or partially integrated companies stated: "Forty of them are substantially integrated; but not over half of these could be rated as majors."¹⁴ Therefore, since there are not more than 20 fully integrated independent companies, the inference that the independents are integrated is not supported by evidence. Furthermore, the combined assets of the integrated independents represent less than 2 percent of the total investment of the petroleum industry. Full integration is definitely not a characteristic of the independent group, composed of thousands of companies and individuals engaged in only one branch of the industry.

It is true that the weekly statistical bulletin of the American Petroleum Institute as such may not lessen competition, but, as was pointed out on page 7 of the monograph, the chief complaint is that recommendations and forecasts of amounts of petroleum products to be produced and maintained in storage are made by the Institute. This does tend to cause price rigidities. A portion of the report of the Institute's Committee on Petroleum Supply and Demand, dated March 26, 1936, is as follows:

Statistics covering a representative percentage of the industry are published each week, and from these figures a close check on the trend of inventories and output can be obtained. If the industry will study these weekly reports and so conduct its operations that the trends recorded therein will be in harmony with those indicated in the forecast for the quarter, sound economic inventory and production levels will result.¹⁵

I do not know what the membership of this committee is today, but it may be significant that in 1936 it was limited to the following representatives of majors and two trade associations:¹⁶

Sidney A. Swensrud, chairman	Standard Oil Co. (Ohio), Cleveland, Ohio.
Fred Van Covern, secretary	American Petroleum Institute, New York, N. Y.
W. C. Allen	The Texas Co., New York, N. Y.
Oliver S. Ambrose	Tide Water Oil Co., New York, N. Y.
W. B. Case	Shell Union Oil Corporation, New York, N. Y.
A. H. Hand	Union Oil Co. of California, Los Angeles, Calif.
E. T. Knight	The Atlantic Refining Co., Philadelphia, Pa.
D. F. Leary	Cities Service Co., New York, N. Y.
Clarel B. Mapes	Mid-Continent Oil and Gas Association, Tulsa, Okla.
A. J. McIntosh	Socony-Vacuum Oil Co., Inc., New York, N. Y.
Charles N. McNeese	Continental Oil Co., Ponca City, Okla.
J. M. Sands	Phillips Petroleum Corporation, Bartlesville, Okla.
E. P. Salisbury	Standard Oil Co. (New Jersey), New York, N. Y.
Earl W. Wagy	Standard Oil Co. of California, San Francisco, Calif.

As late as July 1939, the Institute through its department of statistics made the following recommendation:

Among the things that have been wrong with the industry, during the period of confusion through which it has been passing, has been that in the aggregate it has produced too much crude oil and gasoline, and that the stocks of crude oil and gasoline have been burdensome * * * and again will be under a severe operating handicap if economically desirable inventory levels as of March 31, 1940 are not to be greatly exceeded.¹⁷

It may be asserted that the majors do not comply with the forecast, but this is doubtful, in view of the comparatively rigid prices of crude

¹⁴ Temporary National Economic Committee Hearings, pt. 14, p. 7173.

¹⁵ American Petroleum Institute, Quarterly, April 1936, p. 6.

¹⁶ Ibid., p. 7.

¹⁷ Ibid., July 1939, p. 21.

oil and to a lesser extent gasoline. In the case of gasoline, Standard Oil Co. of New Jersey made no changes in its posted tank wagon (dealer) price for Washington, D. C., from October 3, 1938, to September 10, 1940—a period of almost 2 years.¹⁸ Other tank wagon markets have been comparatively rigid.

PRODUCTION

The comments to be found in the reply on the production chapter of the monograph are essentially only modified restatements of my findings, supplemented by an analysis of some of the economic problems covered in the chapter, but in virtually every case no specific denials of my basic conclusions are made. It is not denied that there exists a considerable disparity between the majors' percentage of crude oil production and their percentage of crude oil reserves, but is merely claimed that such disparity has no connection with, and does not result from, the majors control of transportation. It is a matter of record that the majors purchase over one-third of their net crude-oil requirements from independent producers. There is no free market for crude oil, since virtually all of it is sold at the producers' wells because of the majors' control of pipe lines.

On the question of proration, I did not deny that physical waste as such should be restricted. But, as I pointed out, it must be recognized that many measures urged under the guise of conservation are not motivated by considerations of conservation. They are in effect based on stabilization and price considerations. The study made by the National Resources Committee, "Energy Resources and National Policy" (p. 201) supports this view. The report states:

Although State oil laws have been passed and sustained as conservation measures, their primary purpose, by and large, seems to have been stabilization of the industry.

There is overwhelming evidence to the effect that the economic motive is the primary aim of the majors in sponsoring proration laws. The fact that proven crude-oil reserves have been steadily increasing does not offer any argument for sponsoring proration. Mr. John E. Shatford made it clear as to the motives of production control laws in his statement prepared for the T. N. E. C. He stated:

As has been intimated, it was necessary, at the outset, to introduce price maintenance and other economic objectives under the label of conservation. Early statutes were outright physical waste prohibitions and the customary method was to extend indefinitely the definitions of waste, out of the field of public interest into the field of private economic benefit. And so waste came to have so many phases and definitions that today it is easily possible for an experienced commission limited strictly to physical waste prohibitions to exert full economic control over the production of oil from a pool or from a State so as to avoid competitive drilling; small ownerships of leases and royalties; adjust up or down or destroy values in leaseholds and royalties; create or destroy supplies of oil for local industry; enforce partnership operations while naming which partner shall control; raise or lower production quotas and well allowables or withhold the right entirely to produce and to influence, up or down, the market price of oil.¹⁹

Any proration program should be viewed from the effect on the consumer welfare and the small producer. Proration does not affect the independents the same as majors. The majors can obtain adequate supplies of crude oil, supplemented by their purchases at their own posted price, to operate their mass-production refineries at almost full

¹⁸ National Petroleum News, "Oil Price Handbooks," for 1939 and 1940.

¹⁹ Temporary National Economic Committee Hearings, pt. 15, p. 8524.

capacity. On the other hand, independent refiners operate at only 50 percent of capacity on the average owing to their lack of crude oil pipe lines and inability to obtain adequate supplies of crude oil from their own wells and from other nearby sources, because of proration restrictions.

There is no dispute that proration is based on forecasts of "market demand." Therefore, since prices of crude oil are stable for long periods, it is obvious that the regulation of crude oil production on "market demand" is primarily price stabilization, rather than true conservation. Concerning the effect of proration, Mr. Farish stated before the T. N. E. C.:

Just one word in closing. I do not want to claim for 1 second that proration is against the interest of the large oil companies. It is *in* their interest; but it is also in the interest of the citizens of the producing areas, in the interest of the State and local governments in those areas, and in the interest of the consuming public. It is also most emphatically in the interest of national defense. Furthermore, as regards my own company, the Standard Oil Co. (New Jersey) is a big company in the oil industry, and I have not the slightest hesitation in saying that we are in business to make a profit. But we are in business not merely today and tomorrow, but for a long time to come, and we want to make profits not merely today and tomorrow, but also for a long time to come. Therefore, we can and do look at our problems with a long-run perspective; and in the long run we know that for a company as big as ours its welfare, that is, the welfare of its stockholders and its employees, is unavoidably bound up with the welfare of the country as a whole. When the big oil companies accepted the idea of proration they voluntarily submitted to restraints which they frequently did not like, restraints which made them forego many opportunities for immediate profits, restraints which were directly contrary to their ingrained habits of thought. But they did it because they figured that in the long run these restraints were going to be good for them. They sacrificed immediate profits in order to gain greater assurance of stability for the future. In the light of all the circumstances, I think it is not an overstatement to say that the present proration program sponsored by the oil industry, imperfect though it may be in many respects, represents an important act of real industrial statesmanship.²⁰

TRANSPORTATION

The reply to my chapter on crude oil transportation begins with the charge that my "evidence of control of pipe lines by the majors was published 25 to 35 years ago." This accusation is definitely not supported by the monograph. I made an analysis of the controls of today. However, I still think it is of interest to the reader to be reminded of the fact that the Standard Oil Trust established its control over the industry through its control of transportation. That fact is especially pertinent, in view of the majors' control over pipe lines and tankers today. The argument of the critics that pipe lines are geographically located parallel to one another does not deny that they are used mainly as plant facilities, transporting their own oil. Furthermore, they do not deny that 14 major companies reporting to the Interstate Commerce Commission have 89 percent of the total crude oil mileage which they characterize as "a substantial percentage," but add that conditions are not "similar" to those in 1906. As far as the independent producer or refiner is concerned, his lack of transportation facilities is due to control by his major competitors, in whatever form the control may be.

The authors of the reply disagree with my statement that "the typical minimum tender on crude oil is 50,000 barrels," which I based

²⁰ Temporary National Economic Committee Hearings, pt. 17, p. 9951.

on tariffs in effect in 1940. The table on page 32 of the reply represents an attempt to convey the impression that a 10,000 barrel minimum is the typical requirement. It is not clear whether "today" used in reference to their examination of the tariffs on file with the Interstate Commerce Commission is as of 1940 or 1941. At any rate, I have no reason to question the accuracy of the statistics as given in the table since they are substantially the same as my own. However, the critics do not point out that on the average the large pipe line systems have the highest tenders, and I doubt that the critics could argue that the tenders should be weighted on the basis of mileage or barrel-miles transported in order to obtain a representative picture of minimum tenders for all companies. The following table shows that five subsidiaries of major oil companies with minimum tenders of 100,000 barrels have 34.5 percent of the crude-oil pipe line mileage reported to the Interstate Commerce Commission.

Crude-oil pipe line mileage of 5 companies having minimum tenders of 100,000 barrels Jan. 1, 1940

Company	Crude-oil pipe line mileage		Number of trunk line barrel-miles (millions)	Controlling company
	Total	Trunk		
Gulf Refining Co.	8,087	5,823	28,744	Gulf Oil Corporation.
Illinois Pipe Line Co.	4,586	2,456	14,200	The Ohio Oil Co.
Magnolia Pipe Line Co.	5,815	3,834	18,261	Socony-Vacuum Oil Co., Inc.
Oklahoma Pipe Line Co.	1,398	994	919	Standard Oil Co. (New Jersey).
Sinclair Refining Co.	12,241	6,268	25,929	Consolidated Oil Corporation.
(a) Total for 5 companies	32,127	19,375	88,053	
(b) Total for all companies	93,214	53,641	265,180	
(c) Percent (a) is of (b)	34.5	36.1	33.2	

Source: Interstate Commerce Commission.

The weighted average minimum tenders for all companies, using total crude-oil pipe line mileage as the weighting factor, is 54,199 barrels. This was the basis of my statement in the monograph that the "typical" minimum tender in 1940 was 50,000 barrels. It is true that the Interstate Commerce Commission on December 23, 1940, ordered that crude oil minimum tenders be reduced to 10,000 barrels as a result of its investigation started in June 1934 (Docket No. 26,570) but it is not known to what extent the respondents have complied with that provision of the order.

The comments as to earnings of pipe line companies convey the impression that the high earnings do not restrict independent competition, but do not deny that they are too high. It is no longer a question for argument that crude-oil pipe-line earnings are unusually high, and do not bear a proper relationship between tariff rates, investments, and costs of operation. Owing to the fact that the pipe lines are used largely as plant facilities and transport only the majors' own oil, why are the tariff rates and earnings so high? Since the reply fails to answer this question, it is only logical to conclude that the major owners maintain the high tariff rates to exclude competitors from

using the common carrier lines and have their enormous dividends for use in meeting competition.

It is true that some reductions in crude oil pipe line rates have been made since the investigation started in 1934, but as stated in the report of the Interstate Commerce Commission:

Pipe lines that have been in operation for more than 10 years have long since earned sufficient to recoup the entire amount invested therein by their owners. This is especially true of those lines which are directly affiliated with some one of the large oil companies.

The amount of dividends paid by pipe line companies to the parent company is definitely an indication of their earnings. For the 10-year period ending December 31, 1939, the average annual ratio of dividends declared to capital stock was 32.6 percent.²¹ At this rate it is very obvious that a pipe line does not take long to pay back the investment.

REFINING

The reply contends that independent refiners have the opportunity to locate at the seaboard or consuming centers. Since by and large pipe lines have not been common carriers in fact and have served generally as plant facilities, it would certainly appear that the opposite is true. This aspect of the problem has already been covered in the monograph and rejoinder. The fact that there are 16 independent refiners on the Gulf Coast is no proof of their contention. Those refiners have a large portion of their requirements of crude oil in nearby oil fields.²² Dr. Robert E. Wilson in his testimony before the committee stated, "The Gulf Coast is a very logical place to build a refinery because there are many different sources of crude available and a large market that is served out of the Gulf Coast area." As stated by Mr. Pew,²³ most independent refiners are located in the field. Even the small group of independent refiners that were located on the eastern seaboard about 10 years ago were bought out by the majors, as was pointed out on page 30 of the monograph.

With reference to the exchanges of gasoline between the majors, the reply does not claim that the majors pass these savings on to the consumer; it merely says they can deliver the gasoline more cheaply, which is no doubt true. If the savings were passed on to the purchasers, how could tank wagon prices be so uniform? Exchanging gasoline is somewhat analogous to a division of territory where savings may result through more concentrated selling. Also, it might be well to remind the reader that the radio programs of the majors do not call the public's attention to the great savings passed on to them as a result of exchanges of the gasoline which is so highly advertised as a specially manufactured branded product. Does not the admission of the practice of exchanging gasoline supplies indicate that there is really

²¹ Interstate Commerce Commission: "Statistics of Oil Pipe Lines, 1921-27," Statement No. 396, and "Statistics of Oil Pipe Line Companies for the year ended December 31, 1939," Statement No. 404.

²² Temporary National Economic Committee Hearings, pt. 15, p. 8343.

²³ *Ibid.*, pt. 14, p. 7201. The following testimony supports this point:

"Mr. Cox. I assume from what you said a moment ago that in your opinion there aren't many of the small independent refiners whose refineries are located near the market as distinguished from near the oil field. Is that correct?"

"Mr. Pew. There are a number of refiners that are located, small refiners, on the Gulf Coast.

"Mr. Cox. On the Gulf Coast, but by and large I assume from your answer a moment ago that you said most of them were in the field?"

"Mr. Pew. Most of them located in the field."

not much difference in the qualities and characteristics of the various brands?

I do not feel that the reply has offered any denial of my summary and conclusions of the chapter on refining.

I do not wish to argue that the independent refiners are of the average size and efficiency of the large, mass production refineries of the majors. An attempt was made to point out the disadvantages which faced the independent group made up of the few larger efficient refiners and many plants of only a very small capacity.

MARKETING

At the outset in dealing with my chapter on marketing the reply states on page 45 "If the majors account for 85 percent of the sales of gasoline and do not compete with each other, how can the marketing division be the most competitive? Or, if the marketing division is the most competitive, how can there be virtually no price competition among the majors?" Since the adoption of the Iowa plan in marketing as was explained on pages 45 and 46 of the monograph, the majors operate comparatively few stations, less than 5 percent of the total. In addition to sales to service station operators, the majors do the bulk of the commercial consumer business, at prices lower than to jobbers or dealers for resale. The majors sell the greatest part of their gasoline to service station dealers at rigid tank wagon prices. The competition in retail marketing is among the 240,000 service station operators, 85 percent of whom are supplied with petroleum products by the majors.

The following testimony before the T. N. E. C. shows that price competition comes from the independent dealer rather than from stations operated by salaried employees of the majors:

The CHAIRMAN. In other words, the story is that there are three classes of filling-station operators, and the clear tendency is for the independent to sell at the lowest price because he is the one who is most actively seeking business. He is the most competitive element in the business. The lessee-operator is less competitive, and the salaried operator is least of all.

Mr. SWENSRUD. Yes; I think that is right; except that this middle category gets more and more into the other side.

The CHAIRMAN. That is the impression I have picked up from my own observation, and I am interested to have you confirm it, because it seems to indicate that the major integrated company has a tendency to maintain the price, and that the price competition comes from the independent dealer.

Mr. SWENSRUD. Yes; that is correct, I should say * * * *²⁴

The competition of the majors is limited almost exclusively to advertising of quality and service and the building of new stations to increase their gallonage, the cost of which is eventually absorbed by the consumer. With further reference to the question of "price competition" Mr. Pew stated before the T. N. E. C.:

Mr. Cox. Then the competition you offer is not price competition primarily, but service and quality competition?

Mr. PEW. In connection with the sale of our gasoline through the stations; yes.

Mr. Cox. There have been occasions when you have resorted to price competition in order to get a position in the market?

Mr. PEW. I don't think we ever did much of that.

Mr. BERGE. You don't think you engaged in price competition?

Mr. PEW. I don't think we ever tried * * * *²⁵

²⁴ Temporary National Economic Committee Hearings, pt. 15, p. 8424.

²⁵ Ibid., pt. 14, p. 7243.

The service station operators are the ones who sell in a competitive market. I did not contend that the majors made 85 percent of the sales of gasoline at retail. There is unlimited support for the contention that there is virtually no price competition between the majors in reference to their dealer tank wagon prices. However, the control of the majors over these operators is another question which will be discussed later.

The reply argues that the number of majors operating in a given area is so large that any one of them would be unable to be of value as a price leader. The consistent posting of tank wagon prices by a single major for a given territory makes it convenient for the remaining majors to change prices promptly with the leader, which tends to lessen competition.

It is not denied that the price leaders post prices in their particular areas but they argue that such price poster is "more of a follower than a leader." If this be true, why does the division of territory exist at all? Mr. Sidney A. Swensrud, vice president of the Standard Oil Co. (Ohio), indicated one reason for price posting by his company by the following testimony:

MR. SWENSURD. If you got all our dealers here and asked them if any one of our salesmen had ever made some suggestion to them as to their price policy I don't frankly know what they would say, but we don't attempt to advise our dealers what price they should charge and one reason for that is that they know what we think the price should be, because we post the price at our service stations, and we don't deviate from it one iota.²⁶

The "principal" company is usually the price leader which posts the prices, as may be seen from an examination of the tables on pages 46 and 92 of the monograph, giving the names of the price leaders and their domestic sales of gasoline. Sales figures for Standard Oil Co. (Kentucky) were not included. Furthermore, an analysis of the percentages shown in table 23, page 94, reveals that the sales made by the principal company in each of the 48 States and the District of Columbia averages 23 percent of the total. This percentage is significant.

Great reliance is placed in the reply upon the argument as to the ability of a major price leader to influence prices at which service station operators sell petroleum products, but there is no satisfactory explanation why the posting of tank wagon prices by a market leader is not all the more valuable in areas where a larger number of majors operate than where only a few operate. The larger the number of majors in an area the more convenient it is to have a recognized market leader.

The inference that my comments on the basing point system were founded solely on the practices of the industry many years ago is inaccurate. It may well be that some of them are not so important today as formerly. In Mr. Swensrud's discussion of how and why gasoline price changes take place he refers to the "Gulf cargo market and Midwest tank car market" as being "basic gasoline prices."²⁷

As I stated in the monograph, all the independent refiners on the Atlantic seaboard have been purchased by the majors, and prices are

²⁶ Temporary National Economic Committee Hearings, pt. 15, p. 8422.

²⁷ *Ibid.*, p. 8701. He stated: "When the number of subnormal markets is small, when basic gasoline prices (Gulf cargo market and Midwest tank car market) are firm and showing a tendency to rise, when production and stocks are in balance, when costs are increasing, conditions are right for a general price advance."

now based primarily on quotations given to the trade journals by the Gulf Coast independent refiners. The answer of Standard Oil Co. of New Jersey to T. N. E. C. on "basing points used" (question No. 29) shows that its Bayonne, N. J., and Atlantic seaboard refinery prices are arrived at by considering the Gulf Coast market. This price policy was stated as follows:

The ordinary basis of determining prices by this company is as follows: First, the basic figure is established at such refineries or ocean terminals as Bayonne, N. J.; Baltimore, Md.; Richmond, Va.; Sewes Point, Va.; Wilmington, N. C.; and Charleston, S. C. This basic figure is arrived at by taking into consideration such factors as the Gulf cargo market, transportation, terminaling handling expense and a quality differential.²⁸

The statement made on page 50 of the reply that gasoline prices on the Atlantic seaboard "are based upon the conditions of supply and demand" is not an adequate statement of the real pricing policy.

The reply also claims that "group 3" (Tulsa plus) basis plays no significant part in the pricing of gasoline, and claim that I "was referring to an era long past in the petroleum industry." The answers of the majors made in May 1939 to the T. N. E. C. on "basing points used" show very definitely and clearly that the Tulsa plus basing point system is used. The following are excerpts from answers to T. N. E. C. question No. 29, "Basing points used" ²⁹ which are quoted to confirm my contention:

Empire Gas & Fuel Co. (p. 8124).—In respect to tank car deliveries: The primary price basis for deliveries in all States to which tank car shipments are made is f. o. b. Oklahoma group 3 freight area, (for deliveries within the area itself f. o. b. a specified point therein, and for deliveries to Colorado f. o. b. Ponca City therein). * * *

The Ohio Oil Company (p. 8129).—The group 3 price is what is commonly known as the price posted by the refineries in Oklahoma. These refineries have also obtained the benefit of an established rail freight rate by the railroad companies which makes them on an even transportation cost basis when shipping north beyond the points of Kansas City, Mo. and St. Louis, Mo. or any point on or north of the Chicago, Rock Island & Pacific Railroad extending between Kansas City and St. Louis. This makes it possible for the refineries to ship their products beyond the normal trade area or territory they serve into other marketing territories on an equal basis so far as transportation cost is concerned, regardless of the relative location of the refineries; that is, a refinery in southwestern Oklahoma can ship to Kansas City for the same price per gallon as a refinery in northeastern Oklahoma can ship to Kansas City, a much lesser distance.

Phillips Petroleum Company (p. 8130)—tank car.—Freight rates for most of our tank car sales are based on the group 3 rate. Other freight rate basing points are Okmulgee, Okla., Borger, Tex., Wichita, Kans., Judkins, Tex., and group 2. We have four refineries, as follows:

1. Okmulgee, Okla.: This refinery is located in the group 3 area. Shipments from this refinery into the Midwest States are based on the group 3 freight rate. On shipments within the State of Oklahoma the Okmulgee rate is used.

2. Borger, Tex.: On shipments from this refinery into the Panhandle area of Texas and the States of New Mexico and Colorado the Borger rate is used. On shipments from this refinery into the Midwest States the group 3 rate is the base rate. On shipments into central and western Kansas the Wichita, Kans., rate is used as the base.

²⁸ Temporary National Economic Committee Hearings, pt. 14-A, p. 8135.

²⁹ *Ibid.*, pp. 8124-8139.

Shell Union Oil Corporation (p. 8131).—

CALCULATIONS FOR TYPICAL DESTINATIONS

In the Mid-Continent area mentioned above, a jobber at Decatur, Ill., would purchase his gasoline at the lower of the two prices determined as follows:

	Cents per gallon
(a) Shell's posted normal dealer tank wagon price at Decatur.....	9.6
Deduct	2.0
Resulting price.....	7.6
(b) Shell's posted tank car price—Tulsa.....	4.875
Add rail freight Tulsa-Decatur, Ill.	2.574
Resulting price.....	7.449

Under the above conditions, the jobber would buy at the 7.449 cent price.

*Skelly Oil Co. (p. 8132).—*1. Freight rate basing points for tank car deliveries: (a) Refinery, Tulsa, group 3, for shipments to points in Missouri, Illinois, Indiana, Wisconsin, Michigan, Minnesota, North Dakota, South Dakota, and Nebraska.

*Standard Oil Co. (Indiana) (p. 8133).—*Again, and for the purpose of attempting to place the company's normal prices in line with such competition and to keep said prices orderly and uniform, the company adopted a method of establishing a base price at group 3, which was composed of the average published tank car price plus a spread and which, when added to the freight from group 3, would total the price previously determined to be necessary in the field. Group 3 was selected because freight from that point represented the one element that was common in the price of nearly all competitive gasoline, and it was these competitive gasoline prices that the company was obliged to meet. Subject to one modification, this is the current method. The modification referred to is this: When the company first established the group 3 method for its normal tank wagon prices, such normal prices were permitted to fluctuate with the published spot tank car markets in group 3. This automatic fluctuation has long since been abandoned, and the company's current normal price basis in no respect bears any fixed relationship to the spot tank car market in group 3 or elsewhere.

*Standard Oil Co. of Louisiana (subsidiary of Standard Oil Co. (New Jersey)) (pp. 8136 and 8137).—*In establishing prices, the Standard Oil Co. of Louisiana considers the price of competitive gasoline in group 3, Shreveport, Eldorado, and East Texas and adds to these prices the freight rate from each point to the destination bulk plant. The lowest laid down competitive cost determines the basis for posting prices at each bulk plant. In setting the final prices, Standard Oil Co. of Louisiana adds a quality differential for its gasoline, selling and general expenses incident to a tank car business, the gasoline taxes paid by it, and rounds off the figure to the nearest quarter of a cent. Earlier, group 3 was the principal source of competing gasoline, but Shreveport, Eldorado, and later East Texas have become the principal sources. A large portion of the gasoline which the company sells on the Shreveport and Eldorado bases is produced to company specifications in these centers, not in its Baton Rouge, La., refinery.

* * * * *

Examples of price structure, Standard Oil Co. of Louisiana, build-up of posted Essolene tank car price as of July 6, 1939

Fort Smith, Ark.:

Group 3 quotation.....	\$5.00
Freight, group 3 to Fort Smith.....	1.19
Car service.....	.08
Inspection.....	.05
Allowance for quality miscellaneous costs and profits.....	1.00
Total.....	7.32
Posted tank car price at bulk plant.....	7.25

* * * * *

Incidentally, the group 3 basing point plan grew out of the practice of the railroads and not of the oil industry. The railroads some 20 years ago named a tariff for refined petroleum products originating in Oklahoma and southern Kansas

and going to Chicago and other Middle Western points or to the southeastern seaboard and intermediate points. The current practice is to establish a rate from Tulsa to various destinations and to grant that rate to all shippers irrespective of whether the haul from points of origin to destination is longer or shorter than the haul from Tulsa to that destination.

The Texas Corporation (p. 8188).—In certain sections of the United States, The Texas Co., in order to meet local competition existing there, has employed contracts whereby reference is made to a published price for spot transactions f. o. b. group 3.

The f. o. b. group 3 published spot price is a price established in the spot market by refiners' sales to jobber and consumer purchasers. In consequence the f. o. b. group 3 published spot market price is more in the nature of a reference price to which is added freight from group 3 to point of distribution in order to determine the laid down price to purchasers under contracts containing clauses referring to the spot group 3 price.

Tide Water Associated Oil Co. (p. 8189).—In the Mid-Continent marketing territory, tank car prices for Oklahoma are f. o. b. refinery point (Drumright) as posted by Tide Water Associated Oil Co. Outside of Oklahoma, tank car prices are based f. o. b. group 3.

It is claimed on page 52 of the reply that independents were not prevented from using tetraethyl lead "so long as they complied with the agreements embodied in the contract." This is no doubt true. However, it is significant that one of the basic provisions related to *price maintenance*, as was explained in the monograph on page 45. This question of price control was stipulated by the Ethyl Gasoline Corporation in the litigated case according to the following paragraph:

21. Defendants have refused to issue licenses to a number of jobbers who, investigation showed, were not abiding by the marketing policies prevailing or ostensibly prevailing in the industry or who were not maintaining the retail prices on gasoline posted generally in the industry or whose retail dealers were not maintaining said prices. Such marketing policies and posted prices were those adopted by the major oil companies or the market leaders among such companies, the major oil companies refining about 85 percent of the gasoline sold in the United States and distributing the major portion of the gasoline sold throughout the United States through their own outlets and through jobbers. * * * 30

Some comments are made in the reply on the status of jobbers. On page 53 it is admitted that margins to jobbers have been decreasing and on page 55 it is claimed, based on Mr. Swensrud's testimony and opinion, that the number of jobbers "has steadily increased since 1931 and has more than doubled." There is an apparent conflict between those opinions even if one considers gasoline consumption increased 28 percent from 1931 to 1938.

It is significant that Mr. Swensrud does not point out the number of so called "jobbers" who are exclusive distributors of the branded products of a major company and in addition the number of concerns owned by the major companies but doing business as independent units and so listed in the petroleum directories.

Mr. Blazer's statement quoted on page 55 of the reply is interesting, since it is an argument that independent jobbers can operate profitably when doing business with independent refiners. In this connection it is significant that a large proportion of the major oil companies were convicted of a conspiracy to buy up independent refiners' gasoline with the result that the independent jobbers' source of supplies was limited. As to the 80 percent of the jobbers who handle major branded products³¹ it is interesting to call attention to

³⁰ *United States v. Ethyl Gasoline Corporation et al.* Stipulation in equity No. E. 84-321, District Court for the Southern District of New York.

³¹ See Temporary National Economic Committee Monograph No. 39, p. 42.

the so called *Madison margin case* in which 19 major companies and 16 of their officials plead nolo contendere and paid fines and costs totaling \$462,500 on antitrust charges that they fixed the maximum margins of 2 cents per gallon gross profit for their jobbers and adopted agreed upon uniform jobber contracts.³²

The comments on service station operations begin by quoting Mr. Swensrud's argument that the retail marketing division is not overbuilt. It would appear from past studies that we could get along very well on less service stations, and possibly get lower prices. The tendency in the grocery field is for superstores, and the location of service stations is not so important as grocery stores. The emphasis the majors have made on brand names and the policy of having mainly 100 percent stations for advertising such brands has contributed to the overexpansion and duplication of needless service station outlets. Mr. E. G. Seubert, president, Standard Oil Co. (Indiana), said in September 1934 that "* * * in my opinion we have too many distributing outlets in the industry";³³ Mr. Frank Phillips, of Phillips Petroleum Co., said in November 1934, "I think there are too many filling stations."³⁴ Hon. Harold L. Ickes, Secretary of the Interior, also gave some testimony in reference to the overbuilt nature of service station outlets in the petroleum industry, according to the following testimony:

Mr. MAPES. We talk about the tremendous waste existing in the production of oil, but what about the filling stations? We have three or four at every cross-roads, it seems. Does not that result in tremendous waste there?

Secretary ICKES. I think, Congressman, when we talk about what private industry is doing and consider what private industry has done in building and encouraging the building of unnecessary service stations, we are led to wonder whether there is so much competency among businessmen as is frequently claimed to exist. But I do not see what we can do about the service stations at this time. We know that we are protecting the industry in keeping in existence a great surplussage of unnecessary service stations. But at a time of economic depression we have got to go along. We cannot deprive men of their investments, nor can we throw men out of work if we can avoid it.

That is a future problem that will have to have very careful consideration.³⁵

Mr. Ickes also made a speech before the American Petroleum Institute on November 14, 1934, in which he made some comments regarding the excessive number of service-station outlets. A portion of his speech is quoted as follows:

You have all read, I hope, that delightful little skit "Pigs is Pigs." If you have not read it, please do so, and then you will understand my paraphrase, "Filling stations is filling stations." Surely no one with eyes with which to see, will deny that there must be some kinship between guinea pigs and filling stations. One would think that the chief end and aim of the oil industry is to spawn service stations along the highways and the by-ways of this country. Here is private initiative with a vengeance, an initiative that is putting such a constantly increasing load upon the industry which, unless it is checked, will in the end break down the industry. I recommend to the oil industry that it put some curb on the reproduction of service stations. In your own interest as well as that of the public, you might well consider the advisability of operating this important branch of your industry on some other than the guinea pig theory. It might be well to establish a birth control clinic in an effort to control an output that has already put a severe strain on our whole economic system.

³² See indictment and docket in Case No. 11364, western district of Wisconsin.

³³ Petroleum Investigation, Hearings on H. R. 441, 1934, vol. 1, p. 484.

³⁴ Ibid., vol. 3, p. 1621.

³⁵ Ibid., vol. 1, p. 195.

Service stations are not being produced in this country merely singly or even by way of twins or quadruplets. They come in litters. Nor is the competition confined to mere numbers. Our prudent and conservative businessmen, in deciding upon the type of filling stations that pockmark the roadside at a rate, which, if continued, will soon mean that no one on a road in any part of the country will ever be out of sight of at least one filling station, have adopted that well-known American policy of "keeping up with the Joneses." If one man builds a modest filling station in a pure Colonial type of architecture, the filling station next door, or across the street, must be Georgian or English country home style. If "X" builds a miniature Moorish palace, his competitor will not be satisfied with anything short of something Romanesque. Gasoline may be bought for a song at dwarf Greek temples or abortive Gothic cathedrals. Why go to France to visit the famous chateaux country when one may visit that classical and soul-uplifting American institution, the "greasing palace"; or to Washington to stand in patriotic admiration contemplating the Washington monument or the National Capitol when perhaps right at home he may have a "lubrication emporium" to satisfy his aesthetic needs? At the rate filling stations are being built it might be well to adopt the necropolis type of architecture in anticipation of the day, shortly to come, when groups of filling stations will be in very truth cities of the dead.

While your architects are working on adaptations of Westminster Abbey or the Acropolis in order to cater to the discriminating and exacting tastes of aesthetic automobile owners who insist upon buying their gasoline only at those stations where, with each purchase of a gallon, they can get a spiritual uplift, you are reaching out in other directions and contriving by other means to extend your gallonage at the expense of your rivals.³⁸

According to the Bureau of the Census there were 170,000 service stations in 1933 compared to 241,000 in 1939, an increase of 41 percent. There is no indication that the overbuilt nature of service stations is becoming less, even with due consideration to increased consumption of gasoline.

The latter part of the comments contained in the reply on control over service station outlets is a denial that such control exists. It is argued that a one-half cent price differential between exclusive and nonexclusive dealers is justified by differences in delivery costs. This is an arbitrary assumption since many split stations purchase more gasoline of one brand during the year than many exclusive stations. It would appear that, if costs of delivery are the real considerations, tank wagon price differentials should be based on quantities delivered, which would be more equitable. Credit cards are used as an inducement for service station dealers to become and remain "exclusive." The service station contracts submitted to the T. N. E. C. by the majors show that the short term cancellation provision is quite characteristic. Usually the minimum quantity provision in the contract precludes the possibility of the operator selling competitive products. Perhaps the best way to realize that competitive products are not usually sold at major leased service stations is to inquire at these stations for competitive motor oil. The answer is invariably that the lease would not permit it.

One of the most recent studies of control over service station operation is that made under the direction of Mr. Arthur W. Ramsdell "Report on Marketing Practices in the Retail Distribution of Motor Fuel and Motor Lubricant Products" and printed as part 15-A of the T. N. E. C. Hearings. Mr. Ramsdell concluded:

That urgent action is essential to arrest the practices of the major group is emphasized by the analysis of our findings presented in the statistical section,

³⁸ Address by Hon. Harold L. Ickes, Administrator of the Petroleum Industry and Secretary of the Interior, before the American Petroleum Institute, Dallas, Tex., November 14, 1934, pp. 23-25.

for during the years 1936 to date the findings indicate that the major oil company group have intensified their drive to obtain 100 percent or other type of exclusive dealing, control, of the retail outlets.

The statistical data indicates that practically 85 percent of the retail outlets are controlled by the major group and that the practices of more recent date are to concentrate upon enforcing control for exclusive sale of all major oil company products.

The investigation indicates that coercive tactics are now rigidly applied to force dealers to go "exclusive" for major oil company products. Letters of the type reproduced in the following pages deliver a most threatening ultimatum. With the power to follow through in the hands of the major group, a more restricted market is in the offing.³⁷

The above mentioned report gives substantial support to the contention that service station operators are controlled by the majors. The extent to which service station operators want to be controlled in their marketing policies is not known.

³⁷ Temporary National Economic Committee Hearings, pt. 15-A, p. 8735.



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